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ABSTRACT

Using two statistical analysis techniques (the Program Evaluation and Review Technique and the Critical Path Method), this study analyzed procedures for compiling the required yearly report of the Metropolitan Separate School Board (Catholic) of Toronto, Canada. The computer-assisted analysis organized the process of completing the report more efficiently than the old hand-completion procedures and also allowed completion within the given time constraints. Analysis showed that time constraints allowed little delay at any stage, increasing the importance of efficiency. (JW)

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A PERT/CPM of the Computer Assisted Completion of The Ministry September Report

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January, 1982

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Abstract

Each school in Ontario is required to submit to the Ministry of Education a yearly report which provides a complicated statistical summary of student and teacher populations. The preparation of this report at the Metropolitan Separate School Board (PERT) is computer assisted and was analyzed with the Program Evaluation and Review Technique and the Critical Path Method. (CPM) This analysis suggested that the time constraints on this project are relatively inflexible and that consequently the program must be carefully managed. The analysis also provided a comprehensive understanding of the project which will permit more efficient management of it.

Introduction

There are few, if any, reports required of school boards in Ontario which cause as much concern and produce as much anxiety and frustration as does the report called, "The Ministry September Report". On the surface at least, the report would not seem to be nearly as time consuming and difficult as it is generally made out to be; it requires a statistical summary of the student and teacher populations for each school of a school board for the immediately preceeding 12 months ending September 30th of each year. The concern, problems,and resultant frustration are however very real and stem from a number of different aspects of the report itself, its requirements, its subject matter,and its resultant use.

In the first instance, the report itself requires a number of different categorizations of the same population of students and then summary totals which must, from section to section have equivalent totals, that is it must have internal consistency. Moreover, in the academic specification reporting sections students are classified by type of program (for example, in the section for the Education of Exceptional Students), status in the program (full time or withdrawal), and then summary totals that must reflect a 'body count' not a program count. There are similar conceptually confusing reporting requirements for French Instruction and Industrial Arts/Family Studies' sections. This type of statistical reporting while apparently necessary for the Ministry of Education

is problematic for schools offering a wide variety of programs intended to meet a wide variety of student needs. The statistical reporting requirements further complicate the schools' completion of the September Report (SR) by demanding a count of students by category of mobility (transfers in, out, and retirements) and by category of source and destinations. As well there is a demand for an accounting of enrolment by category of residency at three points during the year: January 31, April 30, and September 30 (sometimes, euphemistically called 'grant days' by those schools boards which receive from the Ministry of Education a significant portion of the financing of their costs, through grants).

A second problematic aspect associated with the September Report is the accuracy level required. At this point in time, the author is unaware of any stated expected or tolerated accuracy level by the Ministry of Education. However, it is presumed that absolute accuracy is demanded since in the Ministry's random audit checks, the auditors seem to expect an error rate of zero. In order to summarize a whole year's history of the school's student and teacher populations within a wide ranging set of categories it is necessary for the school to maintain accurate records.

The ability to maintain good records is severely tried because of the contextual situation of most urban schools today:

highly mobile students and staff. This represents the third and probably the most problematic aspect of accurate completion of the Ministry September Report. When school populations were (or are) reasonably stable, the majority of the students tended to stay in a single elementary school from the time of their entrance at kindergarten or grade 1 until their graduation at grade 8. Whereupon they entered a high school at grade 9 and stayed until leaving or graduating. It is the exception today within an urban milieu especially to have a school where the majority of the population of students remains residency immobile during their elementary and/or high school careers. The average number of schools attended during elementary schooling is approximately two (2) and during high schooling the average is one and half (1.5) schools attended (personal statistics of the author). A similar situation occurs with students within programs within schools. There is an increasing trend for student needs to be addressed by programmatic change. As a result there is a lot more mobility among programs within schools. When residence mobility is compounded by program mobility it is very difficult to maintain hand records sufficiently well that the previous school year can be reconstructed in an accurate statistical manner. And yet, this is the requirement of the Ministry September Report.

The concern for a high level of accuracy of the data in the report is well grounded. Not only does the Ministry of Education use the data extensively for planning and budgeting but also the boards are 'payed' (so to speak) based upon the stated enrolment

within the school on each grant day and also within certain programs (for example, the core and extended French programs). Given a large school board in which there are approximately 200 schools and given that there was an error of just 1 student in each school (one less than actually enrolled per school) and if the amount of the spending ceiling set by the Ministry of Education was $1500/students and the grantable portion for the board was 25% of that ceiling, then the amount of lost revenue would be $75,000. This dollar amount is a very paltry one when budgets are in the 10's of millions but it must be understood that the example presumes a very small error rate (less than 2% for the average size school). Thus the larger the board the greater the aggregate possible error.

The importance of the September Report in funding, its inherent difficulty, the number and interrelatedness of its many sections, coupled with its completion within a large urban board, readily indicate that coordination of its distribution, collection, and validity checking become a large endeavour requiring some systems management so that its completion conforms to certain time constraints. The need for systems management is further increased when the majority of the data for the report is produced as a byproduct of a computerized student record keeping system. The interrelationships and timing of a large number of events and activities of a large number of different peoples have to be managed so that the September Report is not only completed with

rigid time constraints but with an accuracy rate approaching 100%. In order to manage such a project,its events, activities and interrelationships need to be made clearly visible and understandable.

It is the purpose of this paper to subject the completion of the Ministry September Report at the Metropolitan Separate School Board to a Program Evaluation and Review Technique (PERT) and a Critical Path Method (CPM). The use of these analysis techniques will serve to make the process of completion visible, understandable and hopefully manageable within time constraints much reduced from previous dates under hand-completion procedures. In order to do this, it will be necessary to outline the techniques and their use, the Ministry September Report itself, the computerized record keeping system called the Student Data file, and the linkages between the two. The actual PERT and CPM applied to the process of completion of the September report will then be presented.

The MSSB Student Data System

The Metropolitan Separate School Board's (MSSB) student Data System is a computer assisted student record keeping system developed some seven years ago in order to a) eliminate redundancy in report generation and information gathering, b) eliminate variability in the kind of information stored and its collection procedures, c) reduce the work-load associated with student record keeping at the school level, and d) increase the accuracy of these records. Before 1975 every school in the MSSB (there were 188 of them; 171 elementary schools and 17 high schools) kept by hand what is called an Index Card (Ontario Student Office Record Card). This card, part of OSR (Ontario Student Record) system is required by the Education Act, 1974 [1] and is intended to provide schools with important personal and demographic data. The information which must be maintained on the Index Card is listed below:

"- the full name of the student as recorded in the Record folder
- the sex of the student
- the Social Insurance Number of the student where it is provided by the student
- the date of birth of the student and the source of verification thereof
- the name of the father and mother of student, or the name of the guardian of the student, where applicable.
- the current address and home telephone number of the student and an emergency telephone number in respect of the student, where the parent or guardian or the student provide such a number
- the date upon which the student enrols in the school and the date upon which the student transfers to a receiving school or retires from school
- the name and address of the receiving school and the date upon which the student is transferred to such receiving school
- the address of the student on the date he/she transfers from the school or on the date he/she retires from school
- the name and address of the school or such other means of identification thereof as may be sufficient to identify the source of the Index Card.

In addition to the above information, the principal may record on the Index Card:

- current particulars of the professional practioners and advisers working with the student
- the student's means of transportation to and from school
- such other information as the principal considers relevant to assist in locating the student or in obtaining assistance for the student in case of an emergency." [2]

At the time it became clear that the record keeping practices across schools varied considerably. The type of information stored was not necessarily conforming to regulations [3], the procedures for collection varied as did the definitions of categories, and the procedures established for updating and maintenance were essentially non-existent. No one could rely on the information held on a student's file. The student could not rely on the accuracy of information needed from the file to support claims requiring the information (for example, birth date) even though the OSR is a recognized legal document for such purposes [4]. Teachers could not rely on the information being accurate so the tended to maintain their own files - an illegal act unless documented within the record folder [5]. The school/board administrators could not rely on the accuracy of summary data generated from the record to be used for decision-making. This of course was not peculiar to Ontario, in fact, as Humphreys [6] has shown there is little use made of student records because they are generally not maintained. The Student Data File (SDF) system was designed to conform to the requirements of the Education Act and Regulations with respect to OSR's but to change

the recording, maintenance,and administrative use of student records.

Basically the SDF consists of a standard set of information vehicles on which to record student and teacher information and upon which to change the existing information when a change takes place. A standard set of procedures were established for updating and maintaining the information and a standard set of definitions and categories were established. The Student Data Card (SDC) was designed so that it not only contained the legally required information listed above but carried it in specified formats and in greater detail than required in the Regulations. It carried the optional additional information specificed above, as well as, further pieces of information intended to provide the information base for the elimination of considerable administrative report generation difficulties at the school and board levels. In particular, the SDC was designed to carry the additional information of:

1) assessment roll numbers based on address
2) country of birth and date of entry
3) academic program or class information categorized by full-time or part-time placement
4) residency and fee information
5) categories of admission source and demit destination.

These additional pieces of information recorded and maintained allowed audit checking of student registrations (via provincial master assessment rolls) plus the data base requirements for a number of major, difficult, time-consuming administrative reports.

The report most affected by these data was the Ministry September Report. By recording the additional data of Items 2-5 above, and then by using them to assist in the completion of the September Report much of the work of the school was eliminated and the work of validating the Report by board officials was much reduced. The recording of academic program placement allowed production of subsections reports dealing with distributions of students by grade placement and sex as well as distribution by special program and age categories. The recording of admit source and demit destinations allowed the production of an enrolment accounting of admits and demits by category of source and destination respectively ending in a final enrolment as of September 30.

The SDC itself was designed as a turn-around input document to a computerized record maintenance system. The result of the use of this vehicle and a uniform set of procedures, coupled with a vested interest by the school staffs in eliminating the hand completion of reports, was an increase in the accuracy of the data embodied in the Ministry September Report.

The next section will provide a description of the Minsitry September Report in terms of the data requirements of each of its subsections.

The Ministry September Report

The Ministry September Report [10] is a yearly required statistical report of each school in the Province of Ontario. It is made up of a number of sections each constituting a report either on enrolment of students by a variety of categories and/or programs or on staffing. The requirements for some sections and the data requirements of other sections vary from year to year but the majority of the sections and their data requirements remain the same over years. It will be sufficient therefore to use the 1981, Ministry September Report as an example for graphic display and explanatory purposes (cf. Appendix B for a visual display of each subsection).

Below, each subsection of the 1981, September Report is explained in terms of its data requirements and the degree to which it is computer produced through the Student Data File.

Section A: This section is pre-printed by the Ministry of Education from data stored from the previous year's report. The information required includes, Mident number[1], name, address and telephone number of the school, the name and degrees of the principal, language of instruction in the school and school status (open, closed, still in operation). The information is changed by hand.

Section B: This section serves as an enrolment accounting report. It begins with a pre-printed opening enrolment for Oct. 1, of the preceeding year (taken from the closing enrolment of Sept. 30, of the previous year's report). The number of transfers[2] and retirements[3] over the year, defined in terms of a number of categories of destinations are subtracted from this opening enrolment. The number of admissions[4] over the year defined in terms of a number of categories of source are added. The resulting balance constitutes the closing enrolment in the school on Sept. 30. This section is produced entirely from the Student Data File.

Section C: This section reports data on enrolment in the school on Sept. 30, categorized by grade placement and sex. This section is produced entirely from the Student Data File and is used by the schools to assist in the hand completion of Section F. This section also serves as an error monitor document in establishing the accuracy of the SDF for Sept. 30, as well as in internal validation of the September Report itself.

Section D: This report requires the enrolment data on Sept. 30th distributed by age and sex. This report is produced entirely from the SDF.

Section E: This section requires enrolment data on January 31st, April 30th and September 30th by categories of resident and non-resident. Within the category of non-resident the enrolment must be further delineated by source and type of fees paid. This section is hand produced. Although the categories of resident and fee sources have been codified on the Student Data Card there is no procedure in place to audit check the enrolments on January 31st and April 30th.

Section F: This section requires enrolment on Sept. 30th distributed by grade, core french program and more extended programs and by the number of hours/year of instruction in French. The SDF produced section C is used in the system presented here to provide the number of students in the grades and Special Education (column 1).

Section G: This report is peculiar to the French Language schools. The five schools within the MSSB have this section computer produced.

Section H: This section requires the enrolment of Grade 7 and 8 on Sept. 30th distributed by male and female and by Industrial Arts and Family Studies. This report is hand completed but the data are provided to the school through the SDF by way of the data in Report C.

Section I: This section requires data on Junior kindergarten and senior kindergarten enrolment by a variety of possible programming types. Although hand completed, the data are again provided by the computer produced Section B.

Section J: This section is one of the most time consuming and frustrating parts of the report because it requires the September 30th enrolment in Special Education in terms of 14 categories as well as by full and part-time placement and age range. This is also the report whose totals require actual numbers of students as different from programs.

Section K: This report requires data on number of students who received Home Instruction assistance by age ranges. This section is computer produced but is completed by hand.

Section L: This section requires data on remedial programs. It is hand completed although the data are available within the SDF.

Section M: This section is completed only by Roman Catholic schools providing education in grades 9 and 10. The enrolment on Sept. 30th is distributed by program type and age group. This section is completed by hand.

Section N: This section requests the data on enrolment in language classes distributed by length of class placement and age ranges.

Section P: This section is a staff accounting report the same as Section B. The closing number of staff from last year's report is preprinted by the Ministry of Education as an opening balance. This number is reduced by the number of staff withdrawals and increased by the number of staff acquisitions over the year resulting in a closing staff total on Sept. 30th. This section is completed entirely by hand because there is at present no computerized personnel file which would log these data for summary as in Section B.

Section Q: This section requires data on the number of teachers employed part-time and the total aggregate number of hours they work <u>per</u> week. Again these data are provided by hand only.

Teachers Staff Report

This report is pre-printed by the Ministry using (in the MSSB 's case) an extract tape from the Sept. 15th payroll tape. The school provides complete details on any teaching staff acquired between Sept. 15th and Sept. 30th as well as details of demography not included on extract tape. (cf. Appendix B for complete data requirements)

It can be readily seen that the great majority of the September Report requires data on enrolment of students. Since the SDF maintains data in categories required by the Ministry September Report the majority of the report is completed using the SDF system. The production of report from the SDF not only eliminates tiresome hand summaries but eliminates the need for elaborate and time consuming hand checking procedures to ensure that totals across sections are equivalent. The elimination of hand procedures is a direct product of the computer records used for one report, being the same as those used to produce all student reports.

The Computer Assisted Completion of the Ministry September Report

As pointed out above the elementary schools within the MSSB have available to them an SDF which records much of the information needed for the completion of the Ministry September Report (MSR). The data necessities of the MSR are such that the majority of them are referenced to Sept. 30th of the year of the report. It is therefore crucial to the production of data that each student in a school be on file with proper codifications of grade placement, special class placement and source of admissions. It is imperative that all transactions during the previous year be accurate for data points of admission date and source, and demission date and destination. The procedures used to establish this file accuracy are shown in the flowchart of the process (cf. Appendix C)

Five reports are most important. The first is the September Report Diagnostic, which is produced three times: from the Sept. update run, from the first Sept. 30th run and from the third Sept. 30th run. This report lists by students within a school those fields important to the MSR which have missing or invalid information. By the third printing this report should be blank. The second report that is crucial is the class lists. These lists are produced at each Sept. 30th update run and are used by the school to establish the school's SDF's accuracy with respect to the official Register. The SDF's accuracy is crucial for the production of closing enrolment of section B, all of sections C, D, G, H, I, J, and parts of all other sections. These reports are also used to cross-check and internally validate the completed reports.

While the SDF is being updated to accuracy, the totally hand

completed sections are distributed for completion to the schools. This includes the entire high school reports since there is no SDF to produce reports subsections. As soon as the third Sept.30th run is complete, the SDF produced sections of the MSR are produced for the schools and data from Section C is used by them to complete other sections. Once these are returned, the entire report (including hand completed sections) are sent for key-punching. These data are then merged with the SDF data onto a single tape.

The teaching Staff Report (TSR) pre-printed from the Sept. 15th payroll location file is distributed to the schools for completion. Upon return these data are keypunched and merged with the rest of the report to be sent to the Ministry of Education. The data are subjected to a number of internal consistency checks, range checks and comparisons with last year's data. These reports are returned to the Student Data Centre where changes are made. The process of elimination of error recycles until there are no consistency, range or previous years comparison errors. At this point a summary of the board's data is given to the Grants Dept. who have the authority to release the data to the Ministry. Once release is authorized, the schools, board and region offices are provided hard copy documentation.

PERT/CPM: Program Evaluation and Review Technique/Critical Path Method

Since the beginning of the industrial revolution, those who have been responsible for managing the processes of production have attempted to conceptualize those processes in order to control them. Early work around the turn of the 20th century by Fredrich Taylor in time and motion provided a technique to analyse existing complex activities by breaking them down into their elements. By timing the activities and ordering them within the process flow, it became possible to eliminate non-essential and/or redundant activities, and gain better control over the process. Henry Gantt's use of a bar chart indicating relative start, duration, and completion times for a set of activities constituting a process was another later attempt to conceptualize an important aspect of a production process namely, relative time of component activities. The Gantt chart could be used to conceptualize the timing of existing activities within an ongoing production or it could be used to conceptualize and understand component activities of a project before it was begun.

These initial attempts at understanding and control served to lay a foundation for understanding. However, as projects grew larger and more complex and as they became more 'one-time' things the Taylor time and motion study technique and the simple Gantt chart technique proved insufficient. The manager was left without sufficient information to conceptualize and thus control the projects.

This conceptual insufficiency was especially evident in the planning of complex projects. Large complex projects required the coordinated integration of large amounts and types of resources and interdependent activities. The human mind is incapable of grasping wholistically all the intricacies and interdependencies. There was a need for a means of supporting conceptualization by visualizing the project in terms of its activities, events and dependencies.

Milestone charts attempted to overcome some of the deficiencies in the Gantt chart. By conceptualizing the entire project in terms of significant events on a calender time, it was possible to visualize a project and foresee problems and necessary action points. However, the interdependencies were still not visualized nor were, as in Taylor's work, the process broken down into their component elements. The dual arrival of Program Evaluation and Review Technique (PERT) and Critical Path Method (CPM) on the management planning scene provided means of overcoming many of these deficiencies of previous techniques while combining the most important features of those earlier techniques.

In 1957, a Dupont engineer and a Remington-Rand computer analyst developed a technique for planning scheduling, rescheduling and reporting on engineering products. This technique employed a unique arrow-diagram or network to visualize the components of the project; this technique became known as the Critical Path Method (CPM). As well in 1957, the US Navy Office of Special Projects established a research team including management consultants from Booz, Allen, and Hamilton to develop a method of planning and managing the development of the Polaris weapons

system. The problem was a typical one for the times - large, complex development project which in most instances was at or beyond the state-of-the-art in many of its aspects and whose myriad activities were interdependent. As well, the projects usually had associated hugh costs and strict time limits. The resulting planning technique became known as the Program Evaluation and Review Technique (PERT). The combination of PERT and CPM result in a powerful tool in which the interrelationships between events, the scheduling and rescheduling of events and calculating of the times to completion of the events can be diagrammed, visualized and conceptualized. The reception and adoption of the PERT/CPM approach was unprecedented in its scope and speed, and resulted in the spawning of many speciality type copies [11].

The main components of the PERT/CPM analysis are the isolation of events, activities, interdependencies between events and the time estimates for activities (time between events). The resultant schematic is known as a network diagram (cf. Fig 1). Each node (usually represented by a circle) signifies an event (which can be the completion of an activity): each activity is denoted by an arrow. The dependencies are diagrammed by the arrows between dependent events. The time estimates are partially depicted by the length of the arrow but complex diagrams disturb this spacial relationship so that the actual estimates are usually written on activity arrow. Time estimates for the duration of an activity

or to the completion of an activity are given by a knowledgeable person in three categories:

"a" - the most optimistic time

"b" - the most likely time

"c" - the most pessimistic

$$\therefore te = \frac{a + 4m + b}{6} \quad [12]$$

The CPM is analysed by determining that path through the network which takes the longest overall time. If there is a scheduled completion date the CP becomes that path which has "zero slack". Slack is defined as an amount of time beyond that required to complete the activity within the time estimate on the CP.

$$SLACK = T_L - T_E \quad [13]$$

Where T_L = The latest allowable time (calculated on a reversing through the network and the 'End' set equal to zero)

T_E = The earliest completion time (calculated as the sum of all preceeding activity duration on a forward direction thro[illegible]etwork and 'Begin' set at zero.

The standard deviation of time estimates can be approximated using the formula.

$$\sigma te = \frac{b-a}{6} \quad [14]$$

The standard deviation provide information on time constraints of each activity; the larger the standard deviation the more important

it is to attend to the activity (if it has no slack) because the greater is the possibility of fluctuations in completion times. The variance σ_t^2 can be calculated by squaring the standard deviation above. Both σte and σte^2 provide a measure of the range of uncertainty of any event but their important ultimately rests in the provision of a means of calculating the probability of completing a project within the time constraint set by the Σte or the scheduled completion date. By using the formula

$$Z = \frac{TS_n - TE_n}{\sigma t_n} \qquad [15]$$

where TSn = Elapsed time from Begin to event in question-n

TE_n = Earliest expected completion time of Event n

$\sigma t_m = \Sigma \sigma t_i$ where i = Begin to event n

The resulting value of Z can be used with a table of normal probability to provide a value for the probability of meeting a deadline date.

In developing the PERT for the computer assisted completion of the Ministry September Report it was first necessary to isolate all the significant events in the process. These included when programs would be written, when materials would arrive from the Ministry, from computer services and at the schools, and when events would take place within the Student Data File. As well

significant activities had to be isolated and their completion (events) organized by what events precedeand what events follow. Table I lists each event by its time estimate, it predecessor and its successor. This is a necessary first step before any network diagram is developed.

The process of isolating events usually goes through a number of revisions with additions and changes in dependencies. In the present Table I, the numbering system was categorized by its responsibility to either Computer Services, or the Student Data Centre. The result can be somewhat confusing initially but in working with the network diagram it serves a good prompting function.

From the event list (Table I) the PERT/CPM was drawn with its "te's" shown directly on the network diagram (cf. Fig 1). It can be readily seen that the most complicated process revolves around the establishment of the accuracy of the SDF at the elementary school. Its integration with various sections of the September Report is most crucial from an information standpoint but is non-critical; the slack times (cf. Table II) for all hand completed sections is large and none are on the critical path.

TABLE I

Events, Predecessors and Successors for the Computer Assisted Completion of the Ministry September Report.

Event	Description.	Predecessor	Sucessors
Begin	S.R. Contents Finalized by MISB	—	1.0.0
1.0.0	Meeting MISB, ST. Dt. C. and C.S.G	Begin	1.1.0; 1.2.0; 2.4.1; 1.3.1; 1.3.2
1.1.0	Develop Overview of Procedures with Changes	1.0.0	2.1.0; 1.2.0
1.2.0	Design Computer Output Specifications with Changes	1.0.0; 1.1.0	1.3.0
1.3.0	Receive S.R. Documents (Less TSR) from MISB	1.2.0	1.3.1
1.3.1	Separate Elementary S.R. Documents	1.3.0	1.8.0
1.3.2	Separate High School S.R. Documents	1.0.0	1.9.2; 1.10.4
1.4.0	Enter ALL SDC's Including Changes	2.3.1; 2.3.2; 2.3.3; 2.3.4 2.3.5; 2.3.6	1.5.0
1.5.0	Close Sept 15th SDF	1.4.0	2.4.0
1.6.0	Enter ALL SDC's Including Changes	2.5.1; 2.5.2	1.7.0
1.7.0	Close Sept 30th SDF	1.6.0	2.6.0
1.8.0	Edit Elementary S.R. Documents	1.3.1	1.10.2; 1.8.2; 1.8.1; 1.8.1
1.8.1	Separate out TSR and SSAR Documents	1.8.0	1.10.1
1.8.2	Separate out and Mark all SDF Sections of S.R.	1.8.0	1.11.3
1.9.1	Inservice Elementary School Staffs	1.8.0	1.10.3
1.9.2	Inservice High School Staffs	1.3.2	1.9.2
1.10.1	Produce Procedures Memo for El.S. Phase I	1.8.1	1.11.1
1.10.2	Produce Procedures Memo for El.S. Phase II	1.80	1.11.2
1.10.3	Produce Procedures Memo for EL.S. Phase III	1.9.1	1.11.3
1.10.4	Produce Procedures Memo for High Schools	1.3.2	1.11.4
1.11.1	Print Procedures Memo for EL.S. Phase I	1.10.1	1.12.1
1.11.2	Print Procedures Memo for EL.S. Phase II	1.10.2	1.12.2
1.11.3	Print Procedures Memo for EL.S Phase III	1.10.3	1.12.3

TABLE I (cont'd) p.2.

Event	Description	Predecessor	Successor
1.11.4	Print Procedures Memo for High Schools	1.10.4	1.12.4
1.12.1	Package all Materials for EL. S. Phase V	1.11.1 ; 1.13.0	1.14.1
1.12.2	Package all Materials for El. S. Phase II	2.7.1; 2.7.2; 2.7.3; 2.7.4 2.7.5; 2.7.6; 1.11.2	1.14.2
1.12.3	Package all Materials for El. S. Phase III	1.11.3	1.14.3
1.12.4	Package all Materials for High Schools	1.9.2; 1.11.4; 1.13.0	1.14.4
1.13.1	Receive TSR's from MISB	1.14.2	1.16.0
1.16.0	Enter all SDC's & changes via Terminals	1.15.0	2.8.0
1.16.1	Close SDF for Run #2 Sept 30th Update	1.16.0	2.8.0
1.17.0	Record all Telephoned changes To SDF	2.9.0; 2.9.1	1.18.0
1.18.0	Enter all changes via Terminals	1.17.0	1.19.0
1.19.0	Close SDF for Run #3 Sept 30th SDF	2.9.1; 2.9.2; 2.9.3; 2.9.3 1.18.0	2.10.0
1.20.0	Record all Telephoned changes To SDF	2.11.0 ; 2.11.1	1.21.0
1.21.0	Enter all Changes via Terminals	1.20.0	1.22.0
1.21.1	Close SDF for Run #4 Sept 30th SDF	1.21.0; 2.11.1; 2.11.2; 2.11.3 2.11.4	2.12.0
1.22.0	Receive Completed SR's in High School Dept	1.14.4	1.23.0
1.22.2	Receive Completed Phase I from EL.S.	1.14.1	1.24.0
1.22.3	Receive Completed Phase III from EL.S.	1.14.3	1.25.0
1.23.0	Receive Completed SR's from High School Dept.	1.22.1	1.24.0
1.24.0	Ship High School SR's & all TSR's To MISB	1.22.1 ; 1.23.1	1.26.0
1.25.0	Ship Phase III Sections To MISB	1.22.3	1.26.0
1.26.0	Receive Tape of all Keypunching from MISB	1.24.0	2.15.1
1.27.0	Receive Validation Reports from MISB	2.15.0	1.28.0
1.28.0	Submit Corrections To MISB	1.27.0	1.29.0

TABLE I (cont'd). p.3

Event	Description	Predecessor	Successor
1.29.0	Receive Signature To Release Data to MOE	1.28.0	1.30.0
1.30.0	Receive Hard Copy Print of SR. from MISB	1.29.0	1.31.1; 131.2; 1.31.3; 1.31.4
1.31.1	Ship Hard Copy Print of SR. To all Schools	1.31.0	END
1.31.2	Ship Hard Copy Print of SR to Regions	1.31.0	END
1.31.3	Ship Hard Copy Print of SR to Grants Dept	1.31.0	END
1.31.4	Ship Hard Copy Print of SR to St. Ot. C.	1.31.0	END
2.1.0	Prepare Program Changes	1.1.0	1.2.0; 2.2.0
2.2.0	Process Sept 1st SOF	2.1.0	2.3.1; 2.3.2; 2.3.3; 2.3.4; 2.3.5; 2.3.6
2.3.1	Produce all SOC's	2.2.0	1.4.0
2.3.2	Produce Edit/Update Reports	2.2.0	1.4.0
2.3.3	Produce Class Lists	2.2.0	1.4.0
2.3.4	Produce Alpha Lists	2.2.0	1.4.0
2.3.5	Produce SR Diagnostics Reports	2.2.0	1.4.0
2.3.6	Produce Staff Roster Reports	2.2.0	1.4.0
2.4.0	Process Sept 15th SOF	1.5.0	2.5.1; 2.5.2
2.4.1	Process Sept 15th Payroll	1.0.0	2.4.2
2.4.2	Provide MISB with Teacher Location Tape	2.4.1	1.13.0
2.5.1	Produce all SOC's	2.4.0	1.6.0
2.5.2	Produce Edit/Update Report	2.4.0	1.6.0
2.6.0	Process Sept 30th SOF	1.7.0	2.7.1; 2.7.2; 2.7.3; 2.7.4; 2.7.5; 2.7.6
2.7.1	Produce all SOC's	2.6.0	1.12.2
2.7.2	Produce Edit/Update Reports	2.6.0	1.12.2

TABLE I (cont'd) p.4

Event	Description	Predecessor	Successor
2.7.3	Produce Class Lists	2.6.0	1.12.2
2.7.4	Produce Alpha Lists	2.6.0	1.12.2
2.7.5	Produce SR Diagnostics Reports	2.6.0	1.12.2
2.7.6	Produce Staff Roster Reports	2.6.0	1.12.2
2.80	Process Run# 2 Sept 30th Update	1.16.1	2.9.0; 2.9.1; 2.9.2; 2.9.3 2.9.4
2.9.0	Produce al SOC's	2.8.0	1.17.1
2.9.1	Produce Edit/Update Reports	2.8.0	1.17.1; 1.19.0
2.9.2	Produce Alpha Lists	2.8.0	1.19.1
2.9.3	Produce Class Lists	2.8.0	1.19.1
2.9.4	Produce SR Diagnostics Report	2.8.0	1.19.1
2.10.0	Process Run#3 Sept 30th Update	1.19.0	2.11.0; 2.11.1; 2.11.2 2.11.3; 2.11.4
2.11.0	Produce all SOC's	2.10.0	1.20.0
2.11.1	Produce Edit/Update Reports	2.10.0	1.20.0; 1.22.0
2.11.2	Produce Class Lists	2.10.0	1.22.0
2.11.3	Produce SR Diagnostics Reports	2.10.0	1.22.0
2.11.4	Produce SR Sections from SDF	2.10.0	1.22.0
2.12.0	Process Run#4 Sept 30th Update	1.22.0	2.13.1; 2.13.2; 2.13.3 2.13.4; 2.13.5; 2.13.6
2.13.0	Produce all SOC's	2.12.0	2.14.0
2.13.1	Produce Edit/Update Reports	2.12.0	2.14.0
2.13.2	Produce Class Lists (To St. Dt. C)	2.12.0	2.14.0
2.13.4	Produce Alpha Lists (To St. Dt. C.)	2.12.0	2.14.0

TABLE I (cont'd)

Event	Description	Predecessor	Successor
2.13.5	Produce SR Diagnostics Reports (to St. D.C)	2.12.6	2.14.0
2.13.6	Produce SR Sections from SDF	2.12.0	2.14.0
2.14.0	Produce Tape of SR Sections from SDF	2.13.0; 2.13.1; 2.13.4 2.13.5; 2.13.6	2.15.0
2.15.0	Merge Tape of All SR Sections	2.14.0; 1.26.0	1.27.0
END	SR Microfiche Received from MISB (Febisth)	1.13.1; 1.13.2; 1.13.3; 1.13.4	—

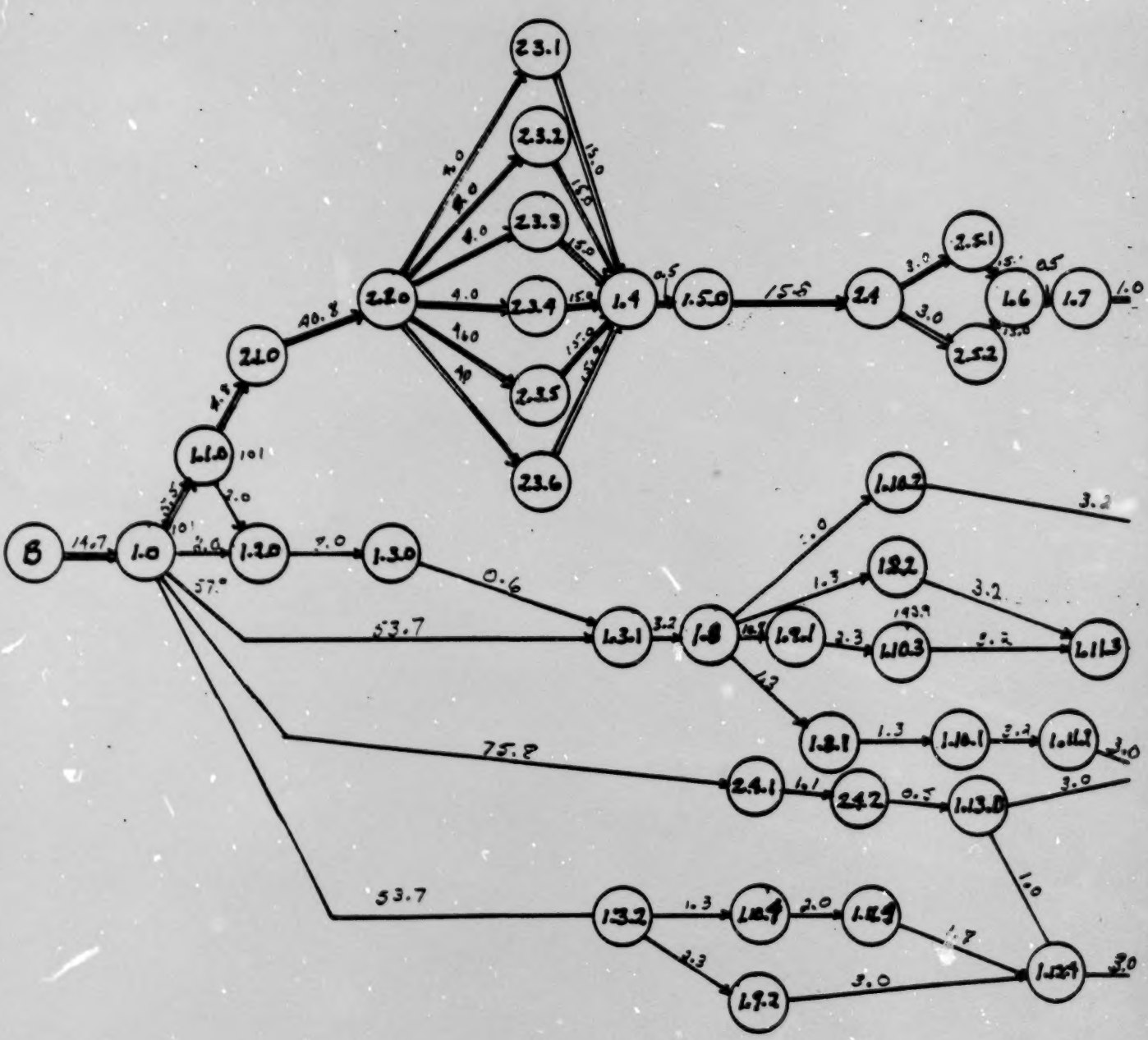

Figure 1.1 A PERT/CPM diagram of the computer assisted completion of the Ministry September Report

Note: a) The Critical Path is shown using double activity arrows
b) Event numbers beginning with Two (2) signify computer related events

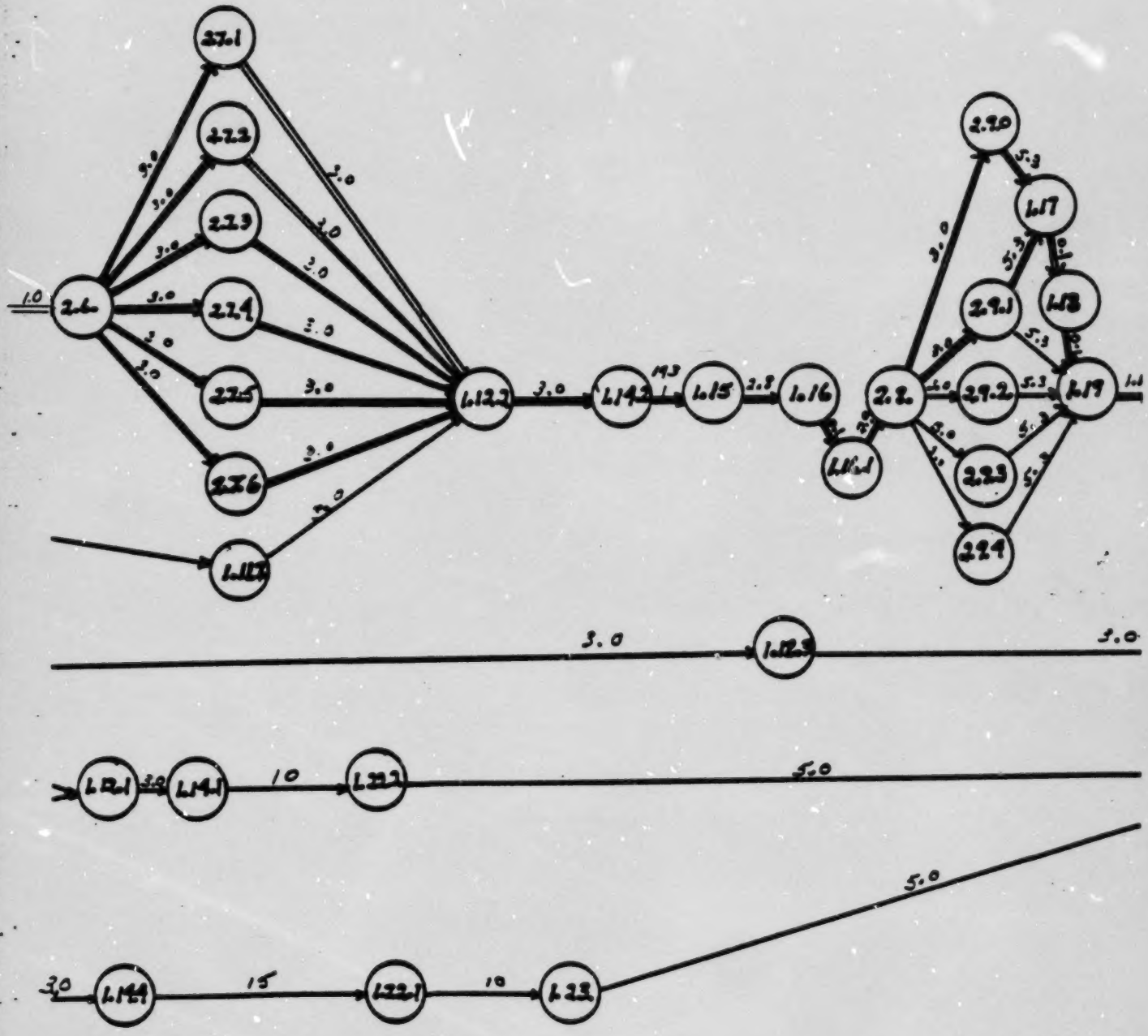
2.1
2.2.1
2.2.2
2.2.3
2.2.4
2.2.5
2.2.6
1.10
3.0
1.12.2
1.14.2
1.15
1.16
2.2
2.9.0
2.9.1
2.9.2
1.17
1.18
1.19
2.2.3
2.2.4
3.0
1.12.1
1.14.1
2.2.2
10
5.0
1.14.4
15
2.2.2.1
1.23

Fig. 1.2 (cont'd)

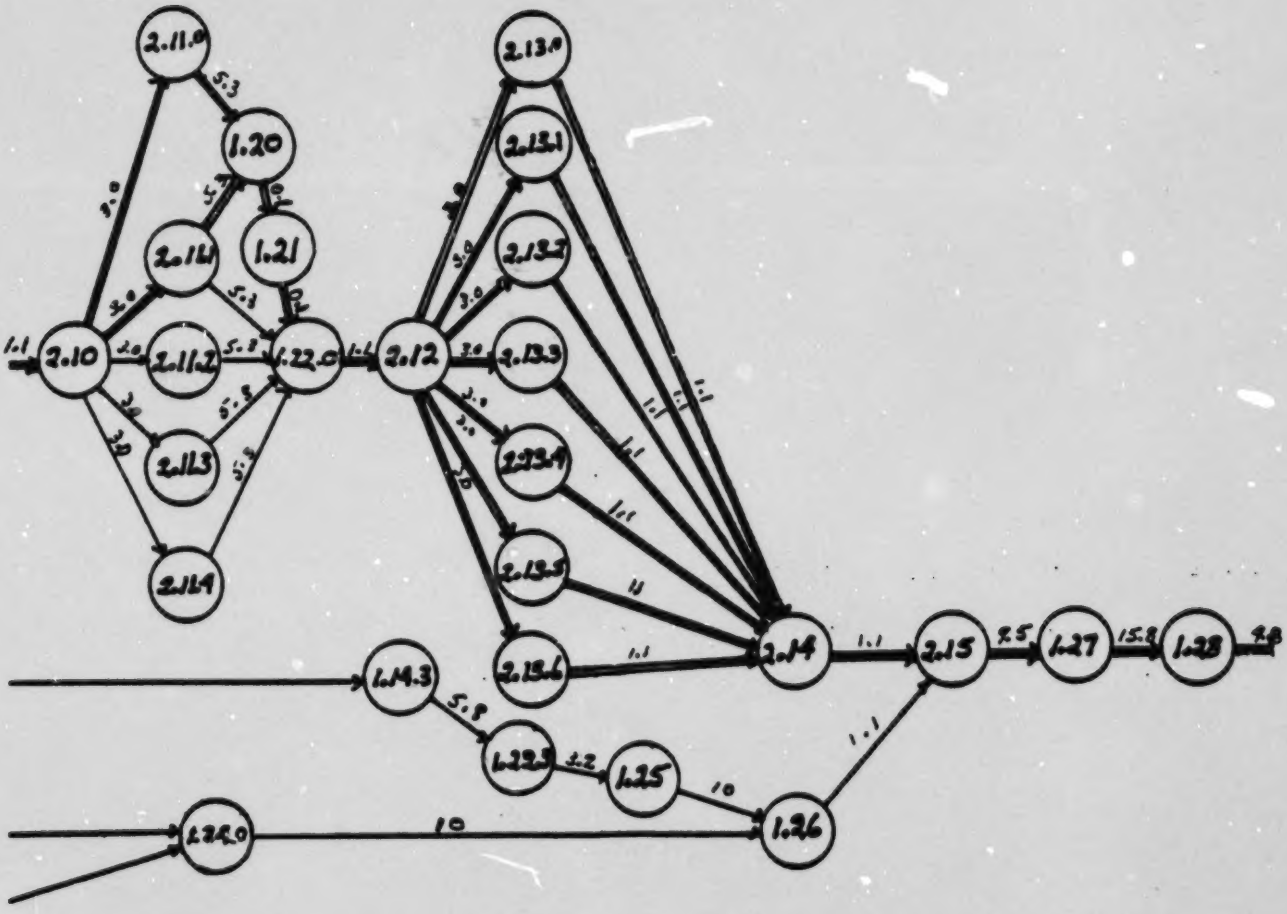
2.11.0
5.3
1.20
2.0
4.7
2.11.1
1.21
5.3
3.0
1.1
2.10
2.0
2.11.2
5.3
1.22.0
1.1
2.12
3.0
2.13.3
3.0
2.11.3
5.3
3.0
2.11.4
2.13.0
2.13.1
2.13.2
2.13.4
2.13.5
1.1
1.1
1.1
1.1
1.1
1.1
2.14
1.1
2.15
2.5
1.27
15.8
1.28
2.8
1.14.3
5.8
1.22.3
4.2
1.25
10
1.1
1.22.0
10
1.26

Fig 1.3 (cont'd)

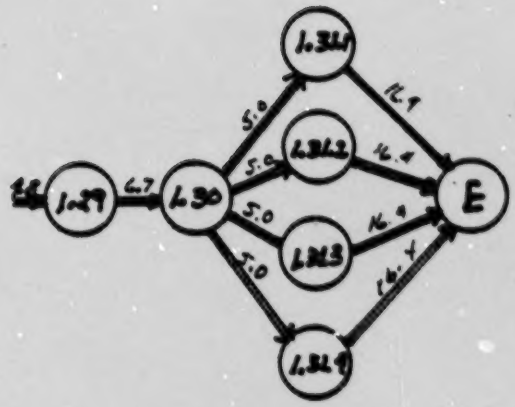

Fig. 1.4 (cont'd)

TABLE II - Time Estimates and Calculations for PERT/CPM of SR. Completion

Predecessor	Event	a	m	b	t_e	σ_{te}	σ_{te}^2	T_E	T_L	$(T_L - T_E)$	T_S	P_r
—	Begin		—		—	—	—	—	—	—	—	—
Begin	1.0.0	2	14	30	14.7	4.67	21.18	14.7	14.7	0.0		
1.0.0	1.1.0	3	5	10	5.5	1.17	1.36	20.2	20.2	0.0		
1.1.0	1.2.0	1	2	3	2.0	0.33	0.11	22.2	106.2	84.0		
1.0.0		2	3	5	3.2	0.50	0.25					
1.2.0	1.3.0	5	7	15	8.0	1.67	2.78	30.0	114.2	84.8		
1.0.0	1.3.1	92	55	60	53.7	3.00	9.00	68.4	114.8	46.4		
1.3.0		.5	.5	1	0.6	0.83	0.01					
1.0.0	1.3.2	42	55	60	53.7	3.00	9.00	68.4	121.6	53.2		
2.3.1	1.4.0	10	15	20	15.0	1.67	2.78	84.4	84.8	0.0		
2.3.2		10	15	20	15.0	1.67	2.78					
2.33.		10	15	20	15.0	1.67	2.78					
2.3.4		10	15	20	15.0	1.67	2.78					
2.3.5		10	15	20	15.0	1.67	2.78					
2.36		10	15	20	15.0	1.67	2.78					
1.4.0	1.5.0	.2	.5	1	0.5	0.13	0.02	85.3	85.3	0.0		
2.5.1	1.60	10	15	20	15.0	1.67	2.78	119.1	119.1	0.0		
2.5.2		10	15	20	15.0	1.67	2.78					
1.6.0	1.7.0	.2	.5	1	0.5	0.13	0.02	119.6	119.6	0.0		
1.3.1	1.8.0	2	3	5	3.2	0.50	0.25	71.6	118.0	46.4		
1.8.0	1.8.1	.5	1	2	1.3	0.25	0.63	72.9	133.6	60.7		
1.8.0	1.8.2	.5	1	2	1.3	0.25	0.63	72.9	133.6	60.7		
1.80	1.9.1	4	10	20	10.8	2.67	7.11	82.4	141.6	59.2		
1.3.2	1.9.2	1	2	5	2.3	0.67	0.44	70.7	123.7	53.0		
1.8.1	1.10.1	.5	1	5	1.3	0.75	0.56	74.2	134.9	60.7		
1.8.0	1.10.2	1	2	3	2.0	0.33	0.11	73.6	120.0	46.4		
1.9.1	1.10.3	1	2	5	2.3	0.67	0.44	84.7	121.6	36.9		
1.3.2	1.10.4	.5	1	5	1.3	0.75	0.56	69.7	122.9	53.2		
1.10.1	1.11.1	2	3	5	3.2	0.50	0.25	77.2	138.9	60.9		

TABLE II (cont'd) p.2.

Predecessor	Event	i	m	a	τ_e	σ_{t_2}	$\sigma^2_{t_2}$	T_E	T_L	$T_L - T_E$ (Slack)	T_S	P_r
1.10.2	1.11.2	2	3	5	3.2	0.25	0.25	76.8	123.2	46.4		
1.10.3	1.11.3	2	3	5	3.2	0.25	0.25	87.9	146.7	58.8		
1.8.2		2	3	5	3.2	0.25	0.25	76.1	143.5	67.4		
1.10.4	1.11.4	1	2	3	2.0	0.33	0.11	71.7	124.9	53.2		
1.11.1	1.12.1	2	3	4	3.0	0.33	0.11	95.1	141.4			
1.13.0		2	3	4	3.0	0.33	0.11					
2.7.1	1.12.2	2	3	4	3.0	0.33	0.11	126.2	126.2	0.0		
2.7.2		2	3	4	3.0	0.33	0.11					
2.7.3		2	3	4	3.0	0.33	0.11					
2.7.4		2	3	4	3.0	0.33	0.11					
2.7.5		2	3	4	3.0	0.33	0.11					
2.7.6		2	3	4	3.0	0.33	0.11					
1.11.2		2	3	4	3.0	0.33	0.11					
1.11.3	1.12.3	2	3	4	3.0	0.33	0.11	90.9	149.7	58.8		
1.9.2	1.12.4	2	3	4	3.0	0.33	0.11	93.1	126.7	33.6		
1.11.4		1	2	2	1.8	0.17	0.28					
1.13.6		.5	1	1.5	1.0	0.17	0.17					
2.9.2	1.13.0	.5	.5	1	0.6	0.08	0.03	92.1	126.7	34.6		
1.12.1	1.14.1	2	3	4	3.0	0.33	0.11	98.1	146.7	48.6		
1.12.2	1.14.2	2	3	4	3.0	0.33	0.11	129.2	129.2	0.0		
1.12.3	1.14.3	2	3	4	3.0	0.33	0.11	93.9	152.7	58.8		
1.12.4	1.14.4	2	3	4	3.0	0.33	0.11	96.1	129.7	33.6		
1.14.2	1.15.0	10	14	20	14.3	1.67	2.78	143.5	143.5	0.0		
1.15.2	1.16.0	1	3	4	2.8	0.50	0.25	146.3	146.3	0.0		
1.16.6	1.16.1	0	0	.5	0.1	0.08	0.01	146.9	146.9	0.0		
2.9.0	1.17.0	5	5	7	5.3	0.33	0.10	156.7	156.7	0.0		
2.9.1		5	5	7	5.3	0.33	0.10					
1.17.0	1.18.0	0	0	.5	0.1	0.08	0.01	156.8	156.8	0.0		
1.18.0	1.19.0	0	0	.5	0.1	0.08	0.01	156.9	156.9	0.0		

TABLE II (CONT'D) p.3

Predecessor	Event	a	m	b	t_e	σ_{te}	σ^2_{te}	T_E	T_L	$(T_L - T_E)$ (slack)	T_S	f_r
2.9.1	1.19.0	5	5	7	5.3	0.33	0.11	153.2	156.9	3.7		
2.9.2		5	5	7	5.3	0.33	0.11					
2.9.3		5	5	7	5.3	0.33	0.11					
2.9.4		5	5	7	5.3	0.33	0.11					
2.11.0	1.20.0	5	5	7	5.3	0.33	0.11	166.3	166.3	0.0		
2.11.1		5	5	7	5.3	0.33	0.11					
1.20.0	1.21.1	0	0	0.5	0.1	0.08	0.01	166.4	166.4	0.0		
1.21.0	1.22.0	0	0	0.5	0.1	0.08	0.01	166.5	166.5	0.0		
2.11.1		5	5	7	5.3	0.33	0.11					
2.11.2		5	5	7	5.3	0.33	0.11					
2.11.3		5	5	7	5.3	0.33	0.11					
2.11.4		5	5	7	5.3	0.33	0.11					
1.14.4	1.22.1	14	14	20	15	1.00	1.00	111.1	146.7	35.6		
1.14.1	1.22.2	5	10	15	10	0.83	2.78	108.1	156.7	48.6		
1.14.3	1.22.3	5	5	10	5.8	0.83	0.69	99.7	158.5	58.8		
1.22.1	1.23.0	5	10	15	10	0.83	2.78	121.1	156.7	35.6		
1.23.1	1.24.0	3	5	7	5.0	0.67	0.99	126.1	161.7	35.6		
1.22.2		3	5	7	5.0	0.67	0.99					
1.22.3	1.25.0	2	3	5	3.2	0.50	0.25	102.9	161.7	58.8		
1.24.0	1.26.0	5	10	15	10	1.67	2.78	136.1	171.7	35.6		
1.25.0		5	10	15	10	1.67	2.78	112.9	161.7	48.8		
2.15.0	1.27.0	5	10	12	9.5	1.17	1.36	182.3	182.3	0.0		
1.27.0	1.28.0	10	15	25	15.8	2.50	2.78	198.1	198.1	0.0		
1.28.0	1.29.0	2	3	15	4.8	2.17	4.69	202.9	202.9	0.0		
1.29.0	1.30.0	5	7	7	6.7	0.33	0.11	209.6	209.6	0.0		
1.30.0	1.31.1	3	5	7	5.0	0.67	0.11	214.6	214.6	0.0		
1.30.0	1.31.2	3	5	7	5.0	0.67	0.11	214.6	214.6	0.0		
1.30.0	1.31.3	3	5	7	5.0	0.67	0.11	214.6	214.6	0.0		
1.30.0	1.31.4	3	5	7	5.0	0.67	0.11	214.6	214.6	0.0		

TABLE II - (cont'd) p.4

Predecessor	Event	a	m	b	t_e	σ_{te}	σ^2_{te}	T_E	T_L	$(T_L - T_E)$ (SLACK)	T_S	P_r
1.1.0	2.1.0	1	2	20	4.8	3.17	10.03	25.2	25.2	0.0		
2.1.0	2.2.0	40	40	45	40.8	0.83	0.69	65.8	65.8	0.0		
2.2.0	2.3.1	2	4	8	4.0	1.00	1.00	69.8	69.8	0.0		
2.2.0	2.3.2	2	4	8	4.0	1.00	1.00	69.8	69.8	0.0		
2.2.0	2.3.3	2	4	8	4.0	1.00	1.00	69.8	69.8	0.0		
2.2.0	2.3.4	2	4	8	4.0	1.00	1.00	69.8	69.8	0.0		
2.2.0	2.3.5	2	4	8	4.0	1.00	1.00	69.8	69.8	0.0		
1.5.0	2.3.6	2	4	8	4.0	1.00	1.00	69.8	69.8	0.0		
1.0.0	2.4.0	15	15	20	15.8	1.67	0.69	101.1	101.1	0.0		
2.4.1	2.4.1	75	75	80	75.8	0.83	0.69	90.5	125.0	34.5		
2.4.0	2.4.2	0.5	1	2	1.1	0.25	0.63	91.6	126.2	34.6		
2.4.0	2.5.1	2	3	4	3.0	0.33	0.11	104.1	104.1	0.0		
1.7.0	2.5.2	2	3	4	3.0	0.33	0.11	104.1	104.1	0.0		
2.6.0	2.6.0	.5	1	2	1.1	0.25	0.63	120.2	120.2	0.0		
2.6.0	2.7.1	2	3	4	3.0	0.33	0.11	123.2	123.2	0.0		
2.6.0	2.7.2	2	3	4	3.0	0.33	0.11	123.2	123.2	0.0		
2.6.0	2.7.3	2	3	4	3.0	0.33	0.11	123.2	123.2	0.0		
2.6.0	2.7.4	2	3	4	3.0	0.33	0.11	123.2	123.2	0.0		
2.6.0	2.7.5	2	3	4	3.0	0.33	0.11	123.2	123.2	0.0		
1.16.1	2.7.6	2	3	4	3.0	0.33	0.11	123.2	123.2	0.0		
2.8.0	2.8.0	1	2	3	2.0	0.33	0.11	148.4	148.4	0.0		
2.8.0	2.9.0	2	3	4	3.0	0.33	0.11	151.4	151.4	0.0		
2.8.0	2.9.1	2	3	4	3.0	0.33	0.11	151.4	151.4	0.0		
2.8.0	2.9.2	2	3	4	3.0	0.33	0.11	151.4	151.6	0.2		
2.8.0	2.9.3	2	3	4	3.0	0.33	0.11	151.4	151.6	0.2		
1.19.0	2.9.4	2	3	4	3.0	0.33	0.11	151.4	151.6	0.2		
2.10.0	2.10.0	0.5	1	2	1.1	0.25	0.63	158.0	158.0	0.0		
2.10.0	2.11.0	2	3	4	3.0	0.33	0.11	161.0	161.0	0.0		

TABLE II - (cont'd) p.5

Predecessor	Event	a	m	b	t_e	σ_{te}	σ_{te}^2	T_E	T_L	$(T_L - T_E)$ slack	T_S	P_r
2.10.0	2.11.1	2	3	4	3.0	0.33	0.11	161.0	161.0	0.0		
2.10.0	2.11.2	2	3	4	3.0	0.33	0.11	161.0	161.2	0.2		
2.10.0	2.11.3	2	3	4	3.0	0.33	0.11	161.0	161.2	0.2		
2.10.0	2.11.4	2	3	4	3.0	0.33	0.11	161.0	161.2	0.2		
1.22.0	2.12.0	0.5	1	2	1.1	0.25	0.63	167.6	167.6	0.0		
2.12.0	2.13.0	2	3	4	3.0	0.33	0.11	170.6	170.6	0.0		
2.12.0	2.13.1	2	3	4	3.0	0.33	0.11	170.6	170.6	0.0		
2.12.0	2.13.2	2	3	4	3.0	0.33	0.11	170.6	170.6	0.0		
2.12.0	2.13.4	2	3	4	3.0	0.33	0.11	170.6	170.6	0.0		
2.12.0	2.13.5	2	3	4	3.0	0.33	0.11	170.6	170.6	0.0		
2.12.0	2.13.6	2	3	4	3.0	0.33	0.11	170.6	170.6	0.0		
2.13.0	2.14.0	0.5	1	2	1.1	0.25	0.63	171.7	171.7	0.0		
2.13.1		0.5	1	2	1.1	0.25	0.63					
2.13.2		0.5	1	2	1.1	0.25	0.63					
2.13.4		0.5	1	2	1.1	0.25	0.63					
2.13.5		0.5	1	2	1.1	0.25	0.63					
2.13.6		0.5	1	2	1.1	0.25	0.63					
2.14.0	2.15.0	0.5	1	2	1.1	0.25	0.63	172.8	172.8	0.0		
1.26.0		0.5	1	2	1.1	0.25	0.63				200.0	.47
1.31.1	END	11	15	28	16.9	2.83	8.03	231.0	231.0	0.0	231.0	.500
1.31.2		11	15	28	16.9	2.83	8.03				247.0	.83
1.31.3		11	15	28	16.9	2.83	8.03					
1.31.4		11	15	28	16.9	2.83	8.03					

$\Sigma \sigma_{t_2}^2 = 168.72$ $Z_a = \frac{200 - 231.0}{168.72} = -.0.078$ $P_r = 0.4681$

$Z_m = \frac{231 - 231}{168.72} = 0.00$ $P_r = 0.500$

$Z_b = \frac{247.0 - 231}{168.72} = +0.095$ $P_r = 0.8289$

Conclusion

The development of the PERT/CPM for the completion of the Ministry September Report served a useful purpose. It allowed the visualization and conceptualization of the entire process together with the interdependency of its constituent activities and events. This conceptual overview together with the time estimates will allow the management of the project to proceed in a more organized, planned manner. The events with Slack and those on the CP are pointed up. However, it is interesting that the probability of completing the project in the most likely time and the most optimistic time are both about 50% whereas the probability of meeting the most pessimistic time is not really that high (83%). This would suggest that the time constraints on the project do not allow much fluctuation and thus the project must be managed carefully.

Some anecdotal information about the project in previous years is interesting. The completion of the Ministry September Report was coordinated through the Student Data Centre for three years. The first year by employing much supervision resources (2 full-time people, one who designed the system and one who complimented it) the report was completely finished by February 15th. The following year with a new supervisor who had all the technical document support and some knowledgeable personnel in assistance but no previous experience with the SDF, the report was not completed until April.

Not only was the time expanded by approximately 8 weeks (some parts were never completed until September) but the clerical assistance and supervision time increased by a factor of two. The next year the Student Data Centre had the flow chart of the process (cf. Appendix C) available. With no extra staff the completion of the report was only 2 weeks overdo. It is hoped that by use of the PERT/CPM the deadline of February 15th will be reached or reduced. The next logical step is to develop a PERT/CPM Cost [7] for the completion process so that its cost efficiency can be analysed, evaluated and controlled.

FOOTNOTES

1. A school's Mident number is that unique Ministry of Education Identification Number which is assigned to each school at the time it is completed. It is a six-digit number. The Ministry maintains a master roll of schools using these numbers

2. A Transfer is defined as a student leaving an Ontario publicly support school to register in another Ontario publicly supported school. [7]

3. A Retirement is defined as a student who leaves an Ontario publicly supported school and does not re-register in another publicly supported Ontario school.[8]

4. An Admission is defined as a student who registers in an Ontario publicly supported school. [9]

APPENDIX A

Student Data File

Field Description and Documents

The Student Data Card

Field No.	Title
01	Student Surname
02-	Student's First Name
03	Student's Second Initial
04	Home Telephone Number
05	Street Number
06	Street Name
07	Apt. No.
08	Postal District
09	Postal Code
10	Birthdate
11	Verification
12	Sex
13	Roman Catholic
14	Sacraments (Baptish, Penance, Eucharist, Confirmation)
15	Class Code (e.g. Room number)
16	Level Code (e.g. Grade: Special Education)
17, 18, 19	Withdrawal (e.g. Special Classes Part Time)
20	Primary Language Spoken in Home
21	Fees
22	Resides With
23	No. of Previous Schools Attended
24	Special Services (e.g. Social Workers)
25	Country of Birth/Date of Entry
26	Social Insurance No. of Student
27	Other Children of Family in School
28	Transportation
29	Assessment Roll Number
30	Student Number (Assigned by Student Data Centre)
40	Surname of Father or Male Guardian
41	First Name of Father or Male Guardian
42	Status (e.g. Deceased)
43	Roman Catholic
44	Business Telephone Number
45	Surname of Mother or Female Guardian
46	First Name
47	Status
48	Roman Catholic
49	Business Telephone Number
50	Street Number
51	Street Name
52	Apt. Number
53	Postal District
54	Postal Code
55	OHIP Number
60	Emergency Name (Name of person who can be contacted in case of emergency)
61	Emergency Telephone No.
62	Physician's Name
63	Physician's Telephone No.

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70	Admit Date (Date of first day the child attends classes in the school)
72	S.L.R. Refers to the Second Language Requirement of the child
73	Date OSR Received (or made up, if the child is a beginner)
74	Departure Date
75	Destination
76	Date OSR Transferred/Retired
82,83	Transferred or Retired To

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STUDENT INFORMATION

01 STUDENT'S SURNAME
02 STUDENT'S FIRST NAME
03 STUDENT'S SECOND INITIAL
04 HOME PHONE NO. — UNLISTED
05 STREET NUMBER
06 STREET NAME
07 APT. NO.
08 POSTAL DISTRICT
09 POSTAL CODE
10 BIRTH DATE — YEAR MO. DAY
11 VERIFICATION
12 SEX
13 ROMAN CATHOLIC
14 SACRAMENTS — BAPTISM, PENANCE, EUCHARIST, CONFIRMATION
15 CLASS CODE
16 LEVEL CODE
17 WITHDRAWAL 1
18 WITHDRAWAL 2
19 WITHDRAWAL 3
20 PRIMARY LANGUAGE SPOKEN IN HOME
21 FEES
22 RESIDES WITH
23 NO. OF PREVIOUS SCHOOLS
24 SPECIAL SERVICES
25 COUNTRY OF BIRTH — DATE OF ENTRY YEAR MO.
26 SOCIAL INSURANCE NO.
27 OTHER CHILDREN OF FAMILY IN SCHOOL
28 TRANSPORTATION

STATUS

YEAR MO. DAY — RUN DATE

SCHOOL CODE

STUDENT NUMBER

29 ASSESSMENT ROLL NUMBER — MUN, MAP DIV., SUB. DIV.

PARENT / GUARDIAN INFORMATION

40 SURNAME OF FATHER OR MALE GUARDIAN
41 FIRST NAME
42 STATUS
43 ROMAN CATHOLIC
44 BUSINESS TELEPHONE NO. — EXTENSION
45 SURNAME OF MOTHER OR FEMALE GUARDIAN
46 FIRST NAME
47 STATUS
48 ROMAN CATHOLIC
49 BUSINESS TELEPHONE NO. — EXTENSION
50 ADDRESS OF PARENT / GUARDIAN — STREET NUMBER
51 STREET NAME
52 APT. NO.
53 POSTAL DISTRICT
54 POSTAL CODE
55 O.H.I.P. NUMBER

EMERGENCY INFORMATION

60 EMERGENCY NAME
61 EMERGENCY TELEPHONE NO. — EXTENSION
62 PHYSICIAN'S NAME
63 TELEPHONE NO. — EXTENSION

NOTES:

ADMITTANCE INFORMATION

70 YEAR MO. DAY — LAST SCHOOL ATTENDED
71 SOURCE
72 S L R
DATE OSR RECEIVED / MADE-UP — 73 YEAR MO. DAY
SCHOOL CODE
80 NAME
81 ADDRESS

TRANSFER-RETIREMENT-DELETION INFORMATION

74 YEAR MO. DAY — TRANSFERRED OR RETIRED TO
75 DESTINATION
DATE OSR TRANSFERRED / RETIRED — 76 YEAR MO. DAY
SCHOOL CODE
82 NAME
83 ADDRESS

SIGNATURE OF PERSON COMPLETING CARD _____ DATE _____ YR MO DAY

SCHOOL NAME AND SCHOOL CODE

SIGNATURE OF PRINCIPAL _____

INFORMATION CHANGE ☐ NEW ADMITTANCE ☐ RE-ADMITTANCE ☐ TRANSFER / RETIREMENT ☐ DELETION ☐

56

57 A3

STUDENT DATA CARD ‡ METROPOLITAN SEPARATE SCHOOL BOARD

STUDENT DATA CARD CODES

HOME TELEPHONE CODE (04)

Unlisted Number ..... U

BIRTHDATE VERIFICATION (11)

Unable to verify 0
Birth Certificate 1
Baptismal Certificate 2
Passport 3
OSR Record 4
Other 9

SEX OF STUDENT (12)

Male ..... M
Female ..... F

ROMAN CATHOLIC (13, 43, 48)

Yes ..... Y
No ..... N
Unable to establish ..... U

SACRAMENTS (14)

Yes ..... Y
No ..... N
Unable to establish ..... U

LEVEL AND / OR WITHDRAWAL (16, 17, 18,)

Junior Kindergarten ..... JK
Kindergarten ..... SK
Grades 1 to 13 ..... 01, 02 ... 13
Special Programs
- Primary 20
- Junior 21
- Intermediate 22
- Behavior 23
- Speech 24
- Hearing Impaired 25
- Home Instruction 26
- Remedial Reading 27
- Learning Disabilities 28
- Gifted 29

Special Program: Other 90
English as a Second Language:
- Primary 40
- Junior 41
- Intermediate 42

English as a Second Language: Experimental 43
Special English:
- Primary 44
- Junior 45
- Intermediate 46

Metro Programs 80

PRIMARY LANGUAGE SPOKEN IN HOME (20)

Unable to establish 00
English 01
French 02
Italian 03
Portuguese 04
Spanish 05
Arabic 06
Ceylonese 07
Chinese 08
Czechoslovakian 09
Dutch 10
Danish 11
German 12
Greek 13
Hungarian 14
Hindi 15
Japanese 16
Korean 17
Maltese 18
Polish 19
Punjabi 20
Russian 21
Serbo-Croatian 22
Slovenian 23
Swedish / Norwegian 24
Ukrainian 25
Other European 90
Other Asian 91
Other African 92
Other 93

FEES (21)

Unable to establish 00
Separate School Supporter 01
Non-Catholic, Parental Fee 02
Mixed Marriage with Lease 03
Mixed Marriage, no Lease 04
Non-Resident, Parental Fee 05
Non-Resident, Fees to MSSB from Other Boards 06
Resident, Fees to Metro Boards from MSSB 07
Crown Wards, S.H.V., C.A.S., Fees to MSSB from Ministry 08
Other 09
Sacred Heart Village, Fees to MSSB from other Boards 10

RESIDENCY OF STUDENT (22)

Unable to establish 0
With Both Mother & Father 1
Father Only 2
Mother Only 3
Guardian Only 4
Other 9

NUMBER OF PREVIOUS SCHOOLS (23)

A tally of previous Schools attended ..... 00, 01, 02 ...

SPECIAL SERVICES (24)

Child has been referred and file established with Special Services Dept. or Regional Office.

Yes ..... Y
No ..... N
Unknown ..... U

COUNTRY OF BIRTH (25)

Unable to establish 00

NORTH & CENTRAL AMERICA
- Canada 01
- United States 02
- Mexico 03
- Central America 09

SOUTH AMERICA
- Argentina 10
- Brazil 11
- Chile 12
- Colombia 13
- Ecuador 14
- Guyana 15
- Peru 16
- Uruguay 17
- Venezuela 18
- Other S.A. Countries 19

WEST INDIES
- Aruba 20
- Barbados 21
- Bermuda 22
- Cuba 23
- Dominican Republic 24
- Haiti 25
- Jamaica 26
- Trinidad & Tobago 27
- Other W.I. Countries 29

EUROPE
- Austria 30
- Belgium 31
- Czechoslovakia 32
- France 33
- Germany 34
- Greece 35
- Hungary 36
- Ireland 37
- Italy 38
- Malta 39
- Poland 40
- Portugal 41
- Scandinavian Countries 42
- Spain 43
- United Kingdom 44
- Yugoslavia 45
- Other European 49

AFRICA
- Angola 50
- Egypt 51
- Kenya 52
- Republic of South Africa 53
- Tanzania 54
- Uganda 55
- Zambia 56
- Other African Country 69

ASIA
- Bangladesh 70
- China 71
- Hong Kong 72
- India 73
- Indonesia 74
- Japan 75
- Korea 76
- Pakistan 77
- Philippines 78
- Sri Lanka (Ceylon) 79
- Viet Nam 80
- Other Asian Country 89

- Australia 90
- New Zealand 91

OTHER CHILDREN OF FAMILY IN SCHOOL (27)

Yes ..... Y
No ..... N

TRANSPORTATION (28)

Unknown 0
Regular: Home to School 1
Kindergarten 2
ESL 3
Special Education 4
Vision, Hearing, Speech 5
Medical, Handicapped 6
Not Transported 7

STATUS OF PARENT / GUARDIAN (42)

Father ..... F
Mother ..... M
Guardian ..... G
Deceased ..... D

ADMISSION SOURCE (71)

Admittance Source Unknown 00

First Time Attender
- Beginner to JK 01
- Beginner to K 02
- Beginner to Grade 1 03

From an Ontario Separate Elementary School
- Within the MSSB 10
- Outside the MSSB, but in Ontario 11

From an Ontario Public Elementary School
- In the same area 20
- Outside the area, but in Metro 21
- Outside of Metro, but in Ontario 22

From a Private Elementary School
- Within Metro 30
- Outside Metro but in Ontario 31

From an Ontario Secondary School
- A MSSB Grade 9 (credit equivalents) 40
- A MSSB Grade 10 (credit equivalents) 41
- A MSSB affiliated Grade 11-13 (credit equivalents) 42
- A Separate High School outside of the MSSB, but in Ontario 43
- An Ontario Public High School, in Metro 44
- An Ontario Public High School, outside Metro 45
- An Ontario Private High School 46

From an Ontario School for the Trainable Retarded 50

From an Ontario Corrective Institution 52

From a Canadian Province Outside of Ontario
- Alberta 60
- British Columbia 61
- Manitoba 62
- New Brunswick 63
- Newfoundland 64
- Nova Scotia 65
- Prince Edward Island 66
- Quebec 67
- Saskatchewan 68
- Yukon & Northwest Territories 69

From a Country other than Canada 80

Student re-entering after a period of non-attendance at any school 90

Student was departed in error, please reinstate 96

Other 99

SECOND LANGUAGE REQUIREMENT (73)

SLR Unable to establish 0
The Student's language skills are adequate 1
The Student requires additional training in English 2
The Student requires additional training in French (French Schools only) 3

TRANSFER, RETIREMENT, DELETION (78)

Transfer or Retirement Destination

Destination Unknown 00

To A Separate Elementary School
- Within the MSSB 10
- Outside the MSSB, but in Ontario 11
- Outside of Ontario 12

To A Public Elementary School
- In the same Area 20
- Outside of the Area, but in Metro 21
- Outside of Metro, but in Ontario 22
- Outside of Ontario 23

To a Private Elementary School
- In Metro 30
- Outside of Metro, but in Ontario 31
- Outside of Ontario 32

To A Secondary School
- A MSSB Grade 9 (credit equivalents) 40
- A MSSB Grade 10 (credit equivalents) 41
- A MSSB affiliated Grade 11-13 (credit equivalents) 42
- A Separate High School in Ontario not affiliated with the MSSB 43
- An Ontario Public High School in Metro 44
- An Ontario Public High School Outside of Metro 45
- An Ontario Private High School 46

To a High School Outside of Ontario 47

To An Ontario School for the Trainable Retarded 50

To a School for the Trainable Retarded outside Ontario 51

To A Corrective Institution 52

To Enter Employment 53

The Student has died 58

Other 99

Deletion Code

This student is double registered 86
This student was never at this school 87
This student was pre-registered but did not appear 88

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SCHOOL STAFF ROSTER CODES

CHANGE CODE

Indicates the type of change you wish to process.

Change in the Class, Accommodation Type, Last Name, First Name or S.I.N. associated with an existing staff record C
Addition of a new level and reference number ..... A
Deletion of an existing level and reference number ..... D

Note: Changes in level/function and/or reference number must be processed by a deletion followed by an addition.

LEVEL/FUNCTION

Indicates the level or program taught or staff position held.

Regular Program

- Junior Kindergarten ..... JK
- Kindergarten ..... SK
- Grades 1 to 13 ..... 01, 02 ... 13

Special Program

- Primary 20
- Junior 21
- Intermediate 22
- Behaviour 23
- Speech 24
- Hearing Impaired 25
- Home Instruction 26
- Remedial Reading 27
- Learning Disabilities 28
- Gifted 29
- Diagnostic - Prescriptive Teacher 35
- Specific learning Disability (Language) 36
- Limited Vision 37
- Blind 38
- Multiple Handicapped 91
- Trainable Mentally Retarded 92
- Early School Leaving Program 98

Language Instruction:

- Primary 40
- Junior 41
- Intermediate 42

Metro Programs 90
Art 50
French 51
Guidance 52
Home Economics 53
Industrial Arts 54
Librarian 55
Music: Instrumental 56
Music: Vocal 57
Physical Education 58

Teacher Aides

Teacher Aide:

- Regular 60
- Library 61
- New Canadian Kindergarten 62
- Special Education 63
- Special Need Budget 64

Administrative Staff

Principal 70
Vice Principal 71
Secretary 72
Clerk-Typist 73

Maintenance Staff

All Maintenance Staff receive a code of 80

REFERENCE NUMBER

A one character field (numeric: 1-9) defining levels, or staff position responsibility.
Do not assign same reference number to different persons within a single category of responsibility.

CLASS

Identifies a class by means of any code you wish to use in either Numeric or Alpha characters. It may specify location and type or it may be completely arbitrary.

ACCOMMODATION TYPE

Indicates the type of facility in which the class is held.

- Permanent Classroom 1
- Portable Classroom 2
- Demountable Facility 3
- Shared Use Facility:
  - a) MSSB School 4
  - b) Board of Education 5
  - c) Private School 6
  - d) Other 7
- Other 8

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APPENDIX B

The Ministry September Report

A. IDENTIFICATION

1. NAME OF SCHOOL/ NOM DE L'ÉCOLE: JOHN AND MARY PUBLIC SCHOOL
2. MAILING ADDRESS/ ADRESSE POSTALE: BOX 696, NORTH BAY, ONTARIO M4A 3P1
3. ACTUAL LOCATION/EMPLACEMENT RÉEL: 321 FIRST ST
4. MUNICIPALITY/ MUNICIPALITÉ: RESOURCE TWP
5. TELEPHONE NO. (AREA)/ NUMÉRO DE TÉLÉPHONE: (111) 222-4433
6. SCHOOL BOARD/ CONSEIL SCOLAIRE: NORTHERN B OF E
7. MINISTRY REGIONAL OFFICE/ BUREAU RÉGIONAL DU MINISTÈRE: NORTHEASTERN ONTARIO
8. PRINCIPAL/ DIRECTEUR D'ÉCOLE: P K BONES
9. DEGREES/ DIPLÔMES: BA MED

10. SCHOOL STATUS/ L'ÉCOLE est

Still in operation/ En service	X	4
Closed since Sept. 30, 1980/ Fermée après le 30 sept. 1980		6
Annexed since Sept. 30, 1980/ Annexée après le 30 sept. 1980		7
Opened since Sept. 30, 1980/ Ouverte après le 30 sept. 1980		3

11. LANGUAGE OF INSTRUCTION/ LANGUE D'ENSEIGNEMENT

English/ Anglais	X	1
French/ Français		2
English & French/ Anglais et Français		3

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BOARD NO -834170 SCHOOL NO - 421700

3417042170013

B. STUDENT ENROLMENT – TRANSFERS, RETIREMENTS AND ADMISSIONS/ EFFECTIF SCOLAIRE – TRANSFERTS, ABANDONS ET INSCRIPTIONS

(1.) ENROLMENT ON SEPTEMBER 30, 1980/ EFFECTIF AU 30 SEPTEMBRE 1980	(01) 295	1
2. TRANSFERS TO OTHER ONTARIO SCHOOLS SINCE SEPTEMBER 30, 1980/ ÉLÈVES QUI, CHANGEANT D'ÉCOLE EN ONTARIO APRÈS LE 30 SEPTEMBRE 1980, SONT PASSÉS À:		
To a public school/ une école publique	1	2
To a separate school/ une école séparée		3
To a secondary school/ une école secondaire	30	4
To a school for trainable retarded children/ une école pour déficients moyens		5
To a class in an approved care or treatment facility/ une classe située dans un établissement de soins et de traitements agréé		6
TOTAL TRANSFERS/ TOTAL DES TRANSFERTS	31	7
3. RETIREMENTS SINCE SEPTEMBER 30, 1980/ ABANDONS SCOLAIRES APRÈS LE 30 SEPTEMBRE 1980		
To a private school in Ontario/ pour aller dans une école privée en Ontario	2	8
To enter employment in Ontario/ pour prendre un emploi en Ontario		9
To another province or territory/ pour aller dans une autre province ou territoire	2	10
To another country/ pour aller dans un autre pays		11
Other (specify)/ autre cas (préciser)		12
TOTAL RETIREMENTS/ TOTAL DES ABANDONS	4	13
(-)(4.) TOTAL TRANSFERS AND RETIREMENTS/ NOMBRE TOTAL D'ÉLÈVES QUI ONT CHANGÉ D'ÉCOLE OU ABANDONNÉ L'ÉCOLE	35	14
5. ADMISSIONS SINCE SEPTEMBER 30, 1980/ INSCRIPTIONS APRÈS LE 30 SEPTEMBRE 1980		
A. Beginners: Students entered on the roll of any school for the first time/ Débutants: élèves inscrits pour la première fois à une école quelconque	(02) 29	1
B. Students previously enrolled with this school board in:/ Élèves antérieurement inscrits dans la circonscription scolaire à:		
An elementary school/ une école élémentaire		2
A secondary school/ une école secondaire		3
A school for trainable retarded children/ une école pour déficients moyens		4
C. Students enrolled previously with another school board in Ontario in:/ Élèves antérieurement inscrits dans une autre circonscription scolaire de l'Ontario, à:		
A public school/ une école publique	6	5
A separate school/ une école séparée		6
A secondary school/ une école secondaire		7
A school for trainable retarded children/ une école pour déficients moyens		8
D. Students enrolled previously in a class in an approved care or treatment facility in Ontario/ Élèves antérieurement inscrits à une classe située dans un établissement de soins ou de traitements agréé de l'Ontario		9
E. Students arriving from a private school in Ontario/ Élèves venant d'une école privée de l'Ontario		10
F. Students re-entering after a period of non-attendance at any school/ Élèves retournant à l'école après avoir cessé toute fréquentation scolaire		11
G. Students arriving from outside Ontario/ Élèves venant de l'extérieur de l'Ontario	5	12
H. Other admissions (specify)/ autres inscriptions (préciser)		13
(+)(6.) TOTAL ADMISSIONS/ TOTAL DES INSCRIPTIONS	40	14
(=)(7.) ENROLMENT ON SEPTEMBER 30, 1981/ EFFECTIF AU 30 SEPTEMBRE 1981	300	15

BREAKDOWN OF ITEM 5G/ VENTILATION DE 5G

NORTH AMERICA/ AMÉRIQUE DU NORD		
Canada (03)		
British Columbia/ Colombie-Britannique		1
Alberta		2
Saskatchewan		3
Manitoba		4
Quebec/ Québec	1	5
Nova Scotia/ Nouvelle-Écosse	1	6
New Brunswick/ Nouveau-Brunswick		7
Prince Edward Island/ Île-du-Prince-Édouard		8
Newfoundland/ Terre-Neuve		9
Yukon & Northwest Territories/ Yukon et Territoires du Nord-Ouest		10
United States/ États-Unis		11
West Indies/ Antilles		12
(Other/ Autres pays)		13
EUROPE (04)		
Germany/ Allemagne		1
Italy/ Italie		2
Portugal		3
United Kingdom/ Royaume-Uni		4
Other/ Autres pays		5
AFRICA/ AFRIQUE		6
ASIA/ ASIE		7
Hong Kong	2	8
Indochina/ Indochine		9
Other/ Autres pays		10
AUSTRALIA/ AUSTRALIE		11
SOUTH AMERICA/ AMÉRIQUE DU SUD		12
TOTAL	5	13

(=)

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C. ENROLMENT BY AGE AND SEX ON SEPTEMBER 30, 1991/
EFFECTIF SELON L'ÂGE ET LE SEXE AU 30 SEPTEMBRE 1991

	AGE/ÂGE	ENGLISH LANGUAGE INSTRUCTIONAL UNIT/ MODULE SCOLAIRE DE LANGUE ANGLAISE		FRENCH LANGUAGE INSTRUCTIONAL UNIT/ MODULE SCOLAIRE DE LANGUE FRANÇAISE		GRAND TOTAL/ TOTAL GLOBAL
		M (1)	F (2)	M (3)	F (4)	(5)
01	3 & under/ 3 ans ou moins					
02	4	10	13			
03	5	15	11			
04	6	13	14			
05	7	15	15			
06	8	18	19			
07	9	19	21			
08	10	17	16			
09	11	15	12			
10	12	16	13			
11	13	11	14			
12	14	3				
13	15					
14	16					
15	17 & over/ 17 ans ou plus					
16	TOTAL	152	148			300

D. ENROLMENT BY GRADE AND SEX ON SEPTEMBER 30, 1991/
EFFECTIF SELON L'ANNÉE D'ÉTUDES ET LE SEXE AU 30 SEPTEMBRE 1991

	GRADE/ANNÉE	ENGLISH LANGUAGE INSTRUCTIONAL UNIT/ MODULE SCOLAIRE DE LANGUE ANGLAISE		FRENCH LANGUAGE INSTRUCTIONAL UNIT/ MODULE SCOLAIRE DE LANGUE FRANÇAISE		GRAND TOTAL/ TOTAL GLOBAL
		M (1)	F (2)	M (3)	F (4)	(5)
01	Junior Kindergarten/ Maternelle	9	14			
02	Kindergarten/ Jardin d'enfants	13	12			
03	1/1re	14	10			
04	2/2e	15	14			
05	3/3e	16	18			
06	4/4e	19	23			
07	5/5e	18	14			
08	6/6e	16	12			
09	7/7e	15	13			
10	8/8e	14	16			
11	9/9e					
12	10/10e					
13	Special Education/ Enfance en difficulté	3	2			
14	TOTAL	152	148			300

(=)

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E. RESIDENT, NON-RESIDENT STUDENTS 1991/ ÉLÈVES RÉSIDANTS, NON RÉSIDANTS 1991

		ENROLMENT ON JANUARY 31/ EFFECTIF AU 31 JANVIER				ENROLMENT ON APRIL 30/ EFFECTIF AU 30 AVRIL				ENROLMENT ON SEPTEMBER 30/ EFFECTIF AU 30 SEPTEMBRE				MINISTRY USE BOARD NUMBER/ RÉSERVÉ AU MINISTÈRE NUMÉRO DU CONSEIL SCOLAIRE
		Full Time/ Plein temps	Half Time/ Mi-temps	Part-Time/ Temps partiel: Number of Students/ Nombre d'élèves	Part-Time/ Temps partiel: Full-Time Equivalent/ Équivalent à plein temps	Full Time/ Plein temps	Half Time/ Mi-temps	Part-Time Temps partiel: Number of Students/ Nombre d'élèves	Part-Time Temps partiel: Full-Time Equivalent/ Équivalent à plein temps	Full Time/ Plein temps	Half Time/ Mi-temps	Part-Time/ Temps partiel: Number of Students/ Nombre d'élèves	Part-Time/ Temps partiel: Full-Time Equivalent/ Équivalent à plein temps	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	1. Residents/Élèves résidents													
01	Junior/Kindergarten & Kindergarten/ Maternelle et jardin d'enfants		42		.00		42		.00		48		.00	
02	Grades 1-8 & Special Education/ 1re à 8e année et enfants en difficulté	250		3	1.40	250		3	1.40	248			.00	
03	Grades 9-10 & Special Education/ 9e et 10e année et enfants en difficulté				.00				.00				.00	
	2. Non-Residents: Fees paid by:/ Élèves non résidents: Droits acquittés par:													
04	A. Gov't of Canada/ le gouvernement du Canada												.00	
05	B. Gov't of Ontario/ le gouvernement de l'Ontario				.00				.00				.00	
06	C. Sources outside Ontario/ Sources hors de l'Ontario												.00	
07	D. Other Boards (JK-10)/ d'autres conseils scolaires (M-10)												.00	
08	WESTERN B OF E									3			.00	
09	EASTERN RCSSB									1			.00	
10					.00				.00				.00	
11					.00				.00				.00	
12					.00				.00				.00	
13	E. Other Boards (9 & 10)/ d'autres conseils scolaires (9 & 10)				.00				.00				.00	
14					.00				.00				.00	
15					.00				.00				.00	
16					.00				.00				.00	
17	3. TOTAL OF ITEMS 1 and 2/ TOTAL DES ARTICLES 1 et 2	250	42	3	1.40	250	42	3	1.40	252	48			

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F. DISTRIBUTION OF SEPTEMBER 30, 1981 ENROLMENT RE FRENCH INSTRUCTION IN CLASSES ESTABLISHED FOR STUDENTS WHOSE FIRST LANGUAGE IS NOT FRENCH/RÉPARTITION AU 30 SEPTEMBRE 1981 DE L'EFFECTIF DES CLASSES DE FRANÇAIS LANGUE SECONDE

	GRADE/ANNÉE	TOTAL NUMBER OF STUDENTS REGISTERED / NOMBRE TOTAL D'ÉLÈVES	NO. FRENCH INSTRUCTION / NBR. de divisions FAD D'ENSEIGNEMENT EN FRANÇAIS	IN A PROGRAM OF FRENCH: For any grade, students reported under a particular program should be taking the same number of hours of French in 1981-82 and should have a similar number of hours accumulated by September 1, 1981/ PROGRAMME DE FRANÇAIS: dans toutes les classes les élèves inscrits à un programme donné doivent suivre le même nombre d'heures de cours en 1981-82 et compter au 1er septembre 1981 un nombre égal d'heures accumulées										
				Core Program/ Programme de base		More intensive programs/Programmes plus intensifs								
						A			B			C		
				No. of divisions / Nombre de divisions	No. of hours of French in 81-82/Nombre d'heures de français en 1981-82	No. of divisions / Nombre de divisions	No. of hours of French in 81-82/Nombre d'heures de français en 1981-82	No. of hours accumulated by Sept. 1/81 / Nombre d'heures accumulées au 1er septembre 1981	No. of divisions / Nombre de divisions	No. of hours of French in 81-82/Nombre d'heures de français en 1981-82	No. of hours accumulated by Sept. 1/81 / Nombre d'heures accumulées au 1er septembre 1981	No. of divisions / Nombre de divisions	No. of hours of French in 81-82/Nombre d'heures de français en 1981-82	No. of hours accumulated by Sept. 1/81 / Nombre d'heures accumulées au 1er septembre 1981
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
01	Junior Kindergarten/ Maternelle	23	23											
02	Kindergarten/ Jardin d'enfants	25		25	60									
03	1/1re	24		24	60									
04	2/2e	29		29	60									
05	3/3e	34		34	60									
06	4/4e	42		42	60									
07	5/5e	32		32	120									
08	6/6e	28		20	120	8	240	420						
09	7/7e	28		25	120	3	240	660						
10	8/8e	30		26	120	4	240	900						
11	9/9e													
12	10/10e													
13	Special education UK-6/ Enfants en difficulté 6A-6	3	3											
14	Special Education (7-10)/ Enfants en difficulté (7-10)	2	2											
15	TOTAL	300	28	257		15								

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G. DISTRIBUTION OF SEPTEMBER 30, 1981 ENROLMENT RE FRENCH INSTRUCTION IN CLASSES ESTABLISHED FOR STUDENTS WHOSE FIRST LANGUAGE IS FRENCH/ RÉPARTITION AU 30 SEPTEMBRE 1981 DE L'EFFECTIF DES CLASSES DE FRANÇAIS DESTINÉES AUX ÉLÈVES FRANCOPHONES.

		Full Time/ Plein temps	Half Time/ Mi-temps	Part-Time/ Temps partiel		Total Number of Students/ Nombre total d'élèves
				Number of Students/ Nombre d'élèves	Full-Time Equivalence/ Équivalence à plein temps	
		(1)	(2)	(3)	(4)	(5)
01	French speaking students/ Élèves francophones				.00	

H. ENROLMENT IN INDUSTRIAL ARTS AND/OR FAMILY STUDIES FOR THE SCHOOL YEAR 1981/82 (see instructions)
EFFECTIF AUX COURS D'ARTS INDUSTRIELS ET DE SCIENCES FAMILIALES DURANT L'ANNÉE 1981-1982 (voir les directives)

		Grade 7 7e année		Grade 8 8e année		Special Education/ Enfance en difficulté	
		M	F	M	F	M	F
		(1)	(2)	(3)	(4)	(5)	(6)
01	Industrial Arts/ Arts industriels	9	5	7	6	1	1
02	Family Studies/ Sciences familiales	6	8	7	10		1

I. KINDERGARTEN AND JUNIOR KINDERGARTEN ATTENDANCE ON SEPTEMBER 30, 1981/
FRÉQUENCE À LA MATERNELLE ET AU JARDIN D'ENFANTS AU 30 SEPTEMBRE 1981

		ENGLISH LANGUAGE INSTRUCTIONAL UNIT/ MODULE SCOLAIRE DE LANGUE ANGLAISE				FRENCH LANGUAGE INSTRUCTIONAL UNIT/ MODULE SCOLAIRE DE LANGUE FRANÇAISE			
		Half day every day/ Demi-journée tous les jours	Full day every day/ Toute la journée tous les jours	Full day alternate day/ Toute la journée un jour sur 2	Other (Specify)/ Autre horaire (préciser)	Half day every day/ Demi-journée tous les jours	Full day every day/ Toute la journée tous les jours	Full day alternate day/ Toute la journée un jour sur 2	Other (Specify)/ Autre horaire (préciser)
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
01	Junior Kindergarten/ Maternelle	23							
02	Kindergarten/ Jardin d'enfants	25							

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ELEMENTARY SCHOOL SEPTEMBER REPORT, 1981
LE RAPPORT DE SEPTEMBRE DES ÉCOLES ÉLÉMENTAIRES 1981
page 4 of 6/ de 6 pages

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J. EDUCATION FOR EXCEPTIONAL STUDENTS SEPTEMBER 30, 1981/ L'ÉDUCATION DE L'ENFANCE EN DIFFICULTÉ AU 30 SEPTEMBRE 1981

Number of students by language of instruction/ Nombre d'élèves selon la langue d'enseignement

		SELF-CONTAINED CLASSES/CLASSES DISTINCTES		RESOURCE WITHDRAWAL PROGRAMS/ PROGRAMMES AUXILIAIRES		AGE DISTRIBUTION/ RÉPARTITION SELON L'ÂGE					
		English/ Anglais	French/ Français	English/ Anglais	French/ Français	5 and under/ 5 ans ou moins	6-8	9-11	12-15	16 and over/ 16 ans ou plus	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
01	Emotionally disturbed, socially maladjusted/ Perturbés affectifs, inadaptés sociaux			1			1				1
02	Deaf/Sourds										
03	Hard of Hearing/Demi-sourds			1			1				1
04	Learning Disabilities/Troubles d'apprentissage										
05	Speech and Language Disorders/ Troubles de la parole ou du langage	5					1	3	1		5
06	Aphasic/Aphasiques										
07	Autistic/Autistes										
08	Gifted/Surdoués										
09	Educable/Déficients légers										
10	Trainable/Déficients moyens										
11	Blind/Aveugles										
12	Limited Vision/ Amblyopes										
13	Physical Handicap/ Handicapés physiques										
14	Multiple Handicap/ Polyhandicapés										
15	Other (specify)/ Autres (préciser en difficulté (préciser)										
16	TOTAL	5		2			3	3	1		7
17	Actual number of exceptional students in self contained classes/ Nombre réel d'enfants en difficulté dans les classes distinctes:	5					1	3	1		5
18	Actual number of students in resource withdrawal programs -- count each student once only/Nombre réel d'élèves dans les programmes auxiliaires -- compter chaque élève une fois seulement			1			1				1

K. HOME INSTRUCTION/ENSEIGNEMENT À DOMICILE

		English/ Anglais	French/ Français	5 and under/ 5 ans ou moins	6-8	9-11	12-15	16 and over/ 16 ans ou plus	Total
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
01	Number of students who received instruction in 1980-81 Nombre d'élèves qui ont suivi le programme durant 1980-1981	1				1			1

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L. REMEDIAL PROGRAMS/ PROGRAMMES D'ORTHOPÉDAGOGIE

Number of students by language of instruction/ Nombre d'élèves selon la langue d'enseignement

		English/ Anglais (1)	French/ Français (2)	5 and under/ 5 ans ou moins (3)	6-8 (4)	9-11 (5)	12-15 (6)	16 and over/ 16 ans ou plus (7)	Total (8)
01	Reading/Lecture	4				1	3		4
02	Mathematics/Calcul	2			1	1			2
03	Other/Autres matières								
04	TOTAL	6			1	2	3		6

M. MODIFIED & BASIC LEVEL EDUCATION IN GRADES 9 & 10 ROMAN CATHOLIC SEPARATE SCHOOLS/ ENSEIGNEMENT AUX NIVEAUX MODIFIÉ ET FONDAMENTAL EN 9E ET 10E ANNÉES DES ÉCOLES SÉPARÉES CATHOLIQUES

Number of students by language of instruction/ Nombre d'élèves selon la langue d'enseignement

		English/ Anglais (1)	French/ Français (2)	5 and under/ 5 ans ou moins (3)	6-8 (4)	9-11 (5)	12-15 (6)	16 and over/ 16 ans ou plus (7)	Total (8)
	General Studies Courses/ Cours Généraux:								
01	Modified/Modifié								
02	Basic/Fondamental								
	Technological Studies Courses/ Cours Techniques:								
03	Modified/Modifié								
04	Basic/Fondamental								
05	TOTAL								
06	Annual number of students enrolled in the above courses -- Count each student once only/Nombre réel d'élèves inscrits dans les cours ci-dessus -- Compter chaque élève une fois seulement								

N. ADDITIONAL LANGUAGE INSTRUCTION/ COURS DE LANGUE ADDITIONNELS

Annual number of students enrolled for a period of more than three months during the 1980-81 school yr in classes of Language Instruction for students whose first language is neither English nor French in order that they may take advantage of regular instruction in the school // Nombre réel d'élèves inscrits en 1980-1981, pour une période dépassant 3 mois, à des cours de langue destinés aux élèves dont la langue maternelle n'est ni l'anglais ni le français, pour leur permettre de bénéficier de l'enseignement régulier de l'école.

		SELF-CONTAINED CLASSES/CLASSES DISTINCTES		RESOURCE WITHDRAWAL PROGRAMS/ PROGRAMMES AUXILIAIRES		AGE DISTRIBUTION/ RÉPARTITION SELON L'ÂGE					
		English/ Anglais (1)	French/ Français (2)	English/ Anglais (3)	French/ Français (4)	5 and under/ 5 ans ou moins (5)	6-8 (6)	9-11 (7)	12-15 (8)	16 and over/ 16 ans ou plus (9)	Total (10)
01	TOTAL			2			1	1			2

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ELEMENTARY SCHOOL SEPTEMBER REPORT, 1981
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G. FULL-TIME TEACHERS/ ENSEIGNANTS À PLEIN TEMPS

1. NUMBER OF TEACHERS (including Principal) on SEPT. 30, 1980/ NOMBRE D'ENSEIGNANTS (y compris le directeur d'école) AU 30 SEPTEMBRE 1980 ... (01) 13 [1]

2. TEACHER WITHDRAWALS SINCE SEPT. 30, 1980/ DÉPARTS D'ENSEIGNANTS APRÈS LE 30 SEPTEMBRE 1980 pour

A. To teach/ Enseigner dans:

in a publicly-supported elementary school in Ontario/ une école élémentaire publique subventionnée de l'Ontario	1	[2]
in a secondary school in Ontario/ une école secondaire de l'Ontario		[3]
in a private school in Ontario/ une école privée de l'Ontario		[4]
in a school for trainable retarded children/ une école pour déficients moyens		[5]
in a class in an approved care or treatment facility in Ontario/ une classe d'un établissement de soins ou de traitements agréé de l'Ontario		[6]
in a school in other provinces or territories (exclude exchange teachers)/ une école d'une autre province ou territoire (enseignants d'échange non compris)		[7]
in a school in other countries (exclude exchange teachers)/ une école d'un autre pays (enseignants d'échange non compris)		[8]
in a college, school or faculty of education in Ontario/ un collège, une école ou une faculté des sciences de l'éducation de l'Ontario	1	[9]
in a college of applied arts and technology/ un collège d'arts appliqués et de technologie		[10]
on a part-time basis/ à temps partiel		[11]
other/ ailleurs		[12]

B. To enrol/ S'inscrire à/

in a university/ une université		[13]
in another educational institution/ un autre établissement d'enseignement		[14]

C. As part of a formal exchange plan/ Participer à un programme officiel d'échange

Teachers from this school going to/ Enseignants de cette école allant à: (24) 1

another board in Ontario/ un autre conseil scolaire de l'Ontario		[1]
another province or territory in Canada/ une autre province ou un territoire du Canada		[2]
another country/un autre pays		[3]
other (specify)/ ailleurs (préciser)		[4]
Teachers leaving after an exchange program/ Enseignants quittant après un programme d'échange		[5]

D. Other reasons/ Autres raisons:

to an administrative, supervisory or consultative position in education/ poste d'administration, de supervision ou de conseil en matière d'éducation		[6]
to employment in a non-teaching occupation/ emploi autre que l'enseignement		[7]
family responsibilities/ raisons familiales		[8]
retirement/ retraite		[9]
injury or illness/ blessures ou maladie		[10]
death/ décès		[11]
other (specify)/ autre raison (préciser)		[12]

(-) 3. TOTAL WITHDRAWALS (2A to 2D inclusive)/ NOMBRE TOTAL DE DÉPARTS (de 2A à 2D inclusivement) ... 3 [13]

4. TEACHERS ACQUIRED SINCE SEPT. 30, 1980/ ENSEIGNANTS ENGAGÉS APRÈS LE 30 SEPTEMBRE 1980

A. From Ontario/ Venant de l'Ontario:

(22)

from an elementary school/ d'une école élémentaire		[1]
from a secondary school/ d'une école secondaire		[2]
from a private school/ d'une école privée		[3]
from a school for trainable retarded children/ d'une école pour déficients moyens		[4]
from a class in an approved care or treatment facility/ d'une classe située dans un établissement de soins ou de traitements agréé		[5]

B. From a school outside Ontario/ Venant d'une école de l'extérieur de l'Ontario:

in another province or territory (exclude exchange teachers)/ d'une autre province ou territoire (enseignants d'échange non compris)		[6]
in another country (exclude exchange teachers)/d'un autre pays (enseignants d'échange non compris)		[7]

C. Beginners (first full-time teaching position in Ontario) graduates of an Ontario teacher education program by year of graduation/ Débutants (premier emploi d'enseignant à plein temps en Ontario) diplômés après avoir suivi un programme de formation des enseignants de l'Ontario, en: (24) 1

1981		[1]
1980		[2]
1979		[3]
1978 and prior / 1978 ou avant		[4]

D. Qualified teachers re-entering who were not employed as teachers in Ontario last year/ Enseignants qualifiés non employés l'an dernier comme enseignants en Ontario et qui enseignent de nouveau [9]

E. Former part-time teachers now teaching full-time/ Ex-enseignants à temps partiel enseignant actuellement à plein temps [6]

F. As part of a formal exchange plan/ Participants à un programme officiel d'échange

Teachers starting a formal exchange from/ Enseignants commençant le programme officiel d'échange:

another board in Ontario/ d'un autre conseil scolaire de l'Ontario	1	[7]
another province or territory in Canada/d'une autre province ou d'un territoire du Canada		[8]
another country/ d'un autre pays		[9]
other (specify)/ ailleurs (préciser)		[10]
Teachers returning to this school from an exchange program/ Enseignants retournant à cette école d'un programme officiel d'échange		[11]

G. Other (specify)/ Autre (préciser) [12]

(+) 4. TOTAL ACQUISITIONS (4A to 4G inclusive)/ NOMBRE TOTAL D'ENSEIGNANTS ENGAGÉS (de 4A à 4G inclusivement) ... 2 [13]

(=) 5. TOTAL FULL-TIME TEACHERS ON SEPT. 30, 1981/ NOMBRE TOTAL D'ENSEIGNANTS À PLEIN TEMPS AU 30 SEPTEMBRE 1981 (26) 12 [1]

F. PART-TIME TEACHERS, SEPTEMBER 30, 1981/ ENSEIGNANTS À TEMPS PARTIEL AU 30 SEPTEMBRE 1981

Teachers employed part-time (include only teachers who have a regularly scheduled assignment)/ Enseignants engagés à temps partiel (ne compter que les enseignants à horaire fixe)

Total Number/ Nombre global ... (01) 2 [1]

Total Hrs. Per Week/ Nombre total d'heures par semaine ... 26 [2]

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SCHOOL SEPTEMBER REPORT FOR 1981 – TEACHING STAFF
LE RAPPORT DE SEPTEMBRE 1981 – LISTE DU PERSONNEL ENSEIGNANT

(BE) 94170 NORTHERN B OF E PAGE 1
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GR JK-8 ELEMENTARY LANG-E

1 DUTY/FONCTION: Principal/Directeur [P] Vice-Principal/Directeur-adjoint [V] Regular teacher/Enseignant ordinaire [S] Other/Autre [O] Department Head/Chef de section [H]

2 SPECIAL PROGRAMS/PROGRAMMES PARTICULIERS: Special Education/Enfance en difficulté [J] Guidance/Orientation [G] Modified & Basic Level – Academic/Niveau modifié et fondamental-général [K] Library/Bibliothèque [N] Modified & Basic Level – Provincial/Niveau modifié et fondamental-provincial [L]

3 MISCELLANEOUS CODES/CODES DIVERS: Temporary Letter of Approval/Autorisation Temporaire [A] Letter of Permission/Permission ordinaire [P] Sabbatical Leave/Congé de ressourcement [S] Maternity Leave/Congé de maternité [M] Exchange/Echange [E]

4 GRADE/ANNEE: JK/M [A] K/J et M [B] 1-3/1re-3e [C] 4-6/4e-6e [D] 7-8/7e-8e [E] Elementary/Elémentaire [F] 9/9e [G] 10/10e [H] 11/11e [I] 12/12e [J] 13/13e [K] Secondary/Secondaire [L] Ungraded/Inadifférencié [T]

* New Staff/Arrivée
– Staff Withdrawal/Départ

Name, Social Insurance Number/Nom, numéro d'assurance sociale	+ or –	1 Duty/Fonction	2 Special Programs/Programmes particuliers	Years of Experience/Expérience dans l'enseignement: Elsewhere/Ailleurs	Here/Ici	Total/Tot.	Other Auth./Autre	Language of Instruction/Langue d'enseignement: Engl./Ang.	Fr./Fr.	Part Time/Temps Partiel	3 Misc./Div.	4 Grade/Année				Ministry Use/Réservé au ministère	Subject Area/Matière
100 353 649 BROWN DOUGLAS		S	J	15	00	00		100	000			A	B	C			MULTI SUBJECTS
101 947 928 HUTCHINGS MARY		P		~~27~~ 20	00	00		100	000			F					
101 537 265 MOHAR PAUL		S		15	~~07~~ 02	00		100	000			D	E				MULTI SUBJECTS
101 543 556 TAYLOR KATHLEEN		S		07	00	00		~~100~~ 80	000 20			B C	C	D			MULTI SUBJECTS ENGLISH
111 222 333 FOX PETER	+	S	J	5	10			100	20			F					MULTI SUBJECTS

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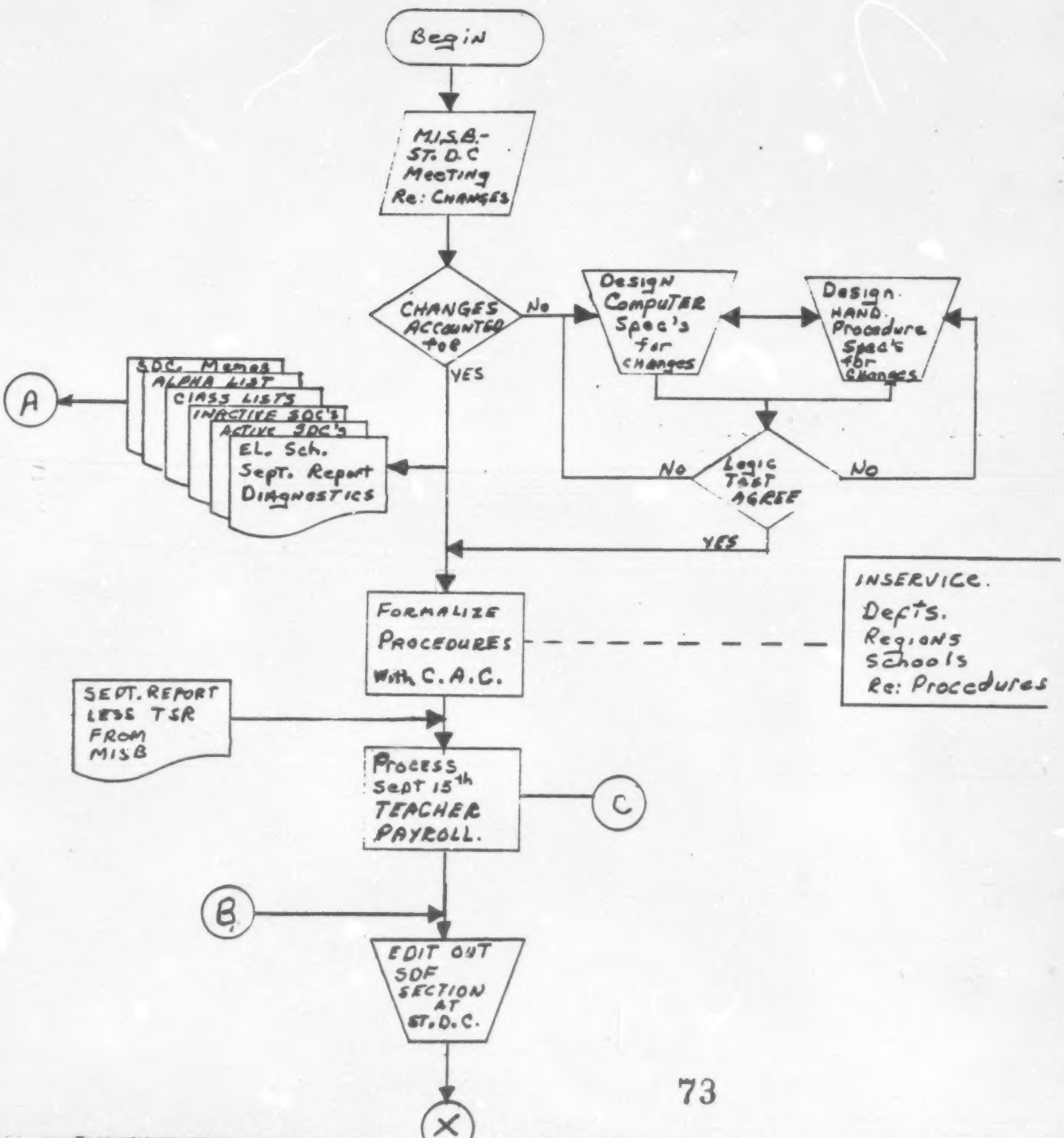
APPENDIX C

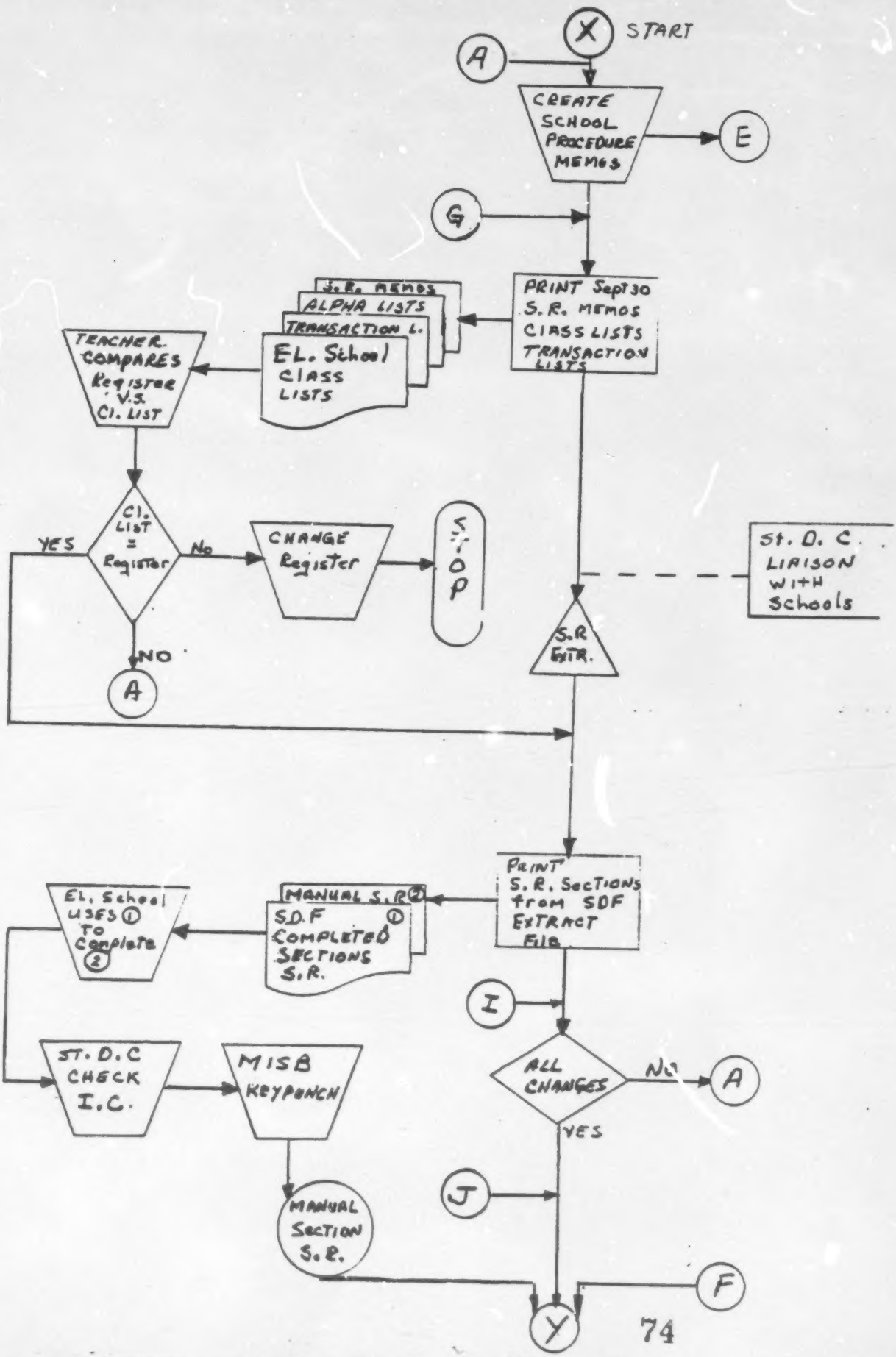
Flowchart of a Computer Assisted Completion of the Ministry September Report

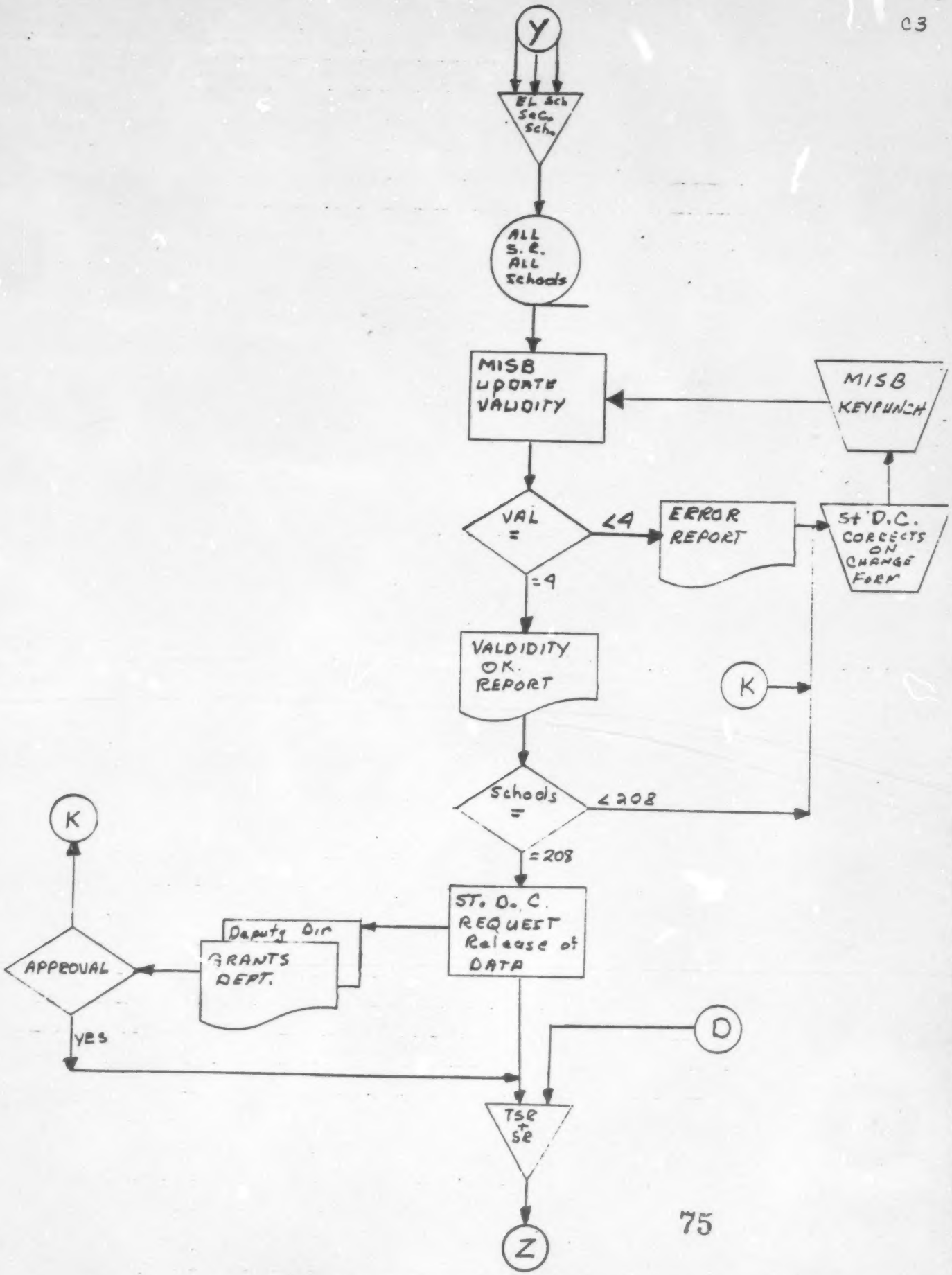
GLOSSARY OF ABBREVIATIONS

M.S.S.B.	-	The Metropolitan Separate School Board, Toronto
S.D.F.	-	Student Data File
S.D.C.	-	Student Data Card
St.D.C.	-	Student Data Centre
O.M.E.	-	The Ontario Ministry of Education
M.I.S.B.	-	Management Information Systems Branch (O.M.E.)
S.R.	-	September Report
T.S.R.	-	Teaching Staff Report (a sub-report within S.R.)
4	-	Code point check value indicating internal validity
208	-	The number of schools within the M.S.S.B.
C.A.C.	-	Computer Applications Committee
Register	-	O.M.E. official registry of students in a class and record of attendance.
I.C.	-	Internal consitency check. (Account totals check within and between sub-reports)

Flowchart of the Computer-Assisted Completion of the OMESR within the M.S.S.B.

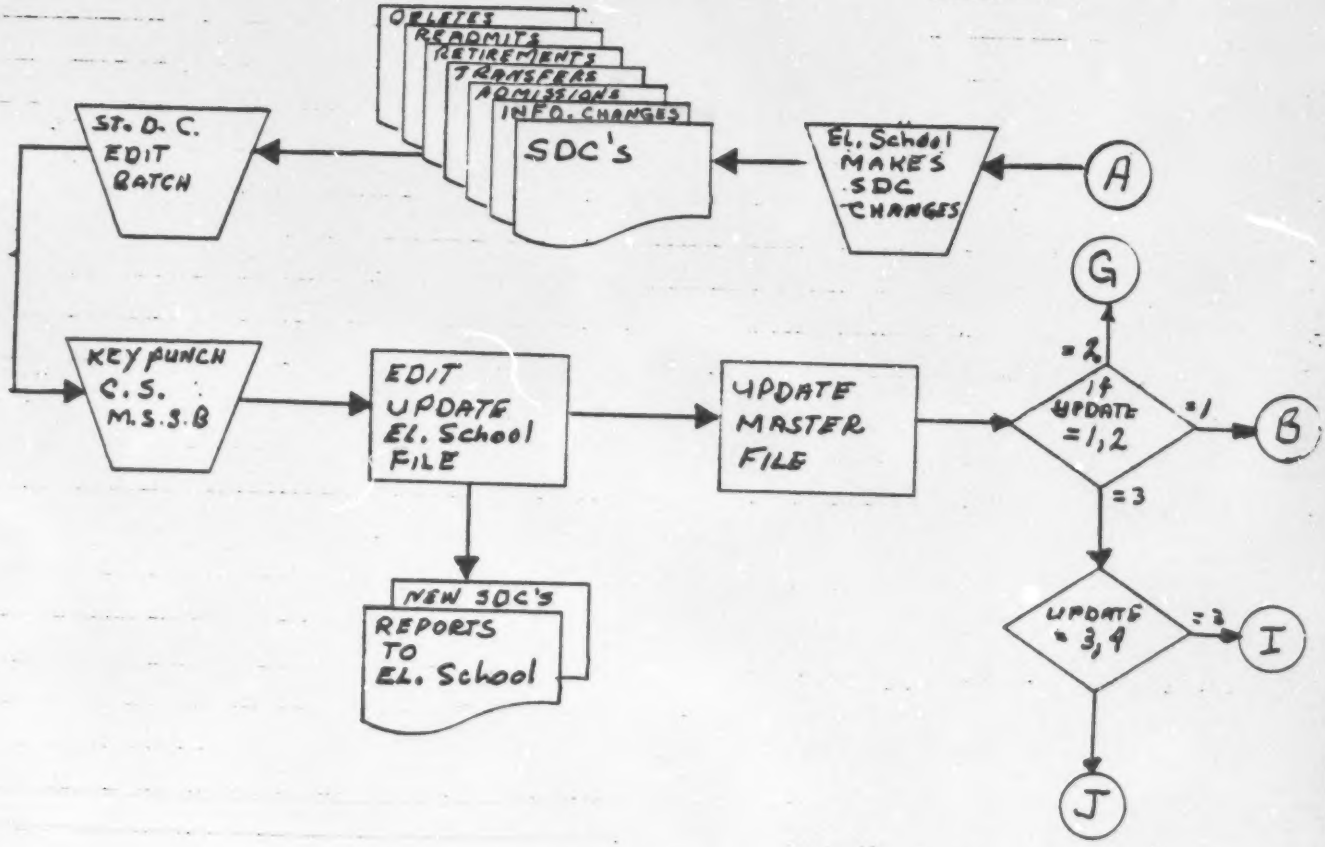



START
A
X
CREATE SCHOOL PROCEDURE MEMOS
E
G
PRINT Sept 30 S.R. MEMOS CLASS LISTS TRANSACTION LISTS
S.R. MEMOS
ALPHA LISTS
TRANSACTION L.
EL. School CLASS LISTS
TEACHER COMPARES Register V.S. Cl. LIST
Cl. LIST = Register
YES
No
CHANGE Register
STOP
NO
A
St. D. C. LIAISON WITH Schools
S.R EXTR.
PRINT S. R. Sections from SDF EXTRACT File
MANUAL S.R.
S.D.F COMPLETED SECTIONS S.R.
EL. School USES ① TO Complete ②
ST. D.C CHECK I.C.
MISB KEYPUNCH
MANUAL SECTION S.R.
I
ALL CHANGES
No
A
YES
J
F
Y

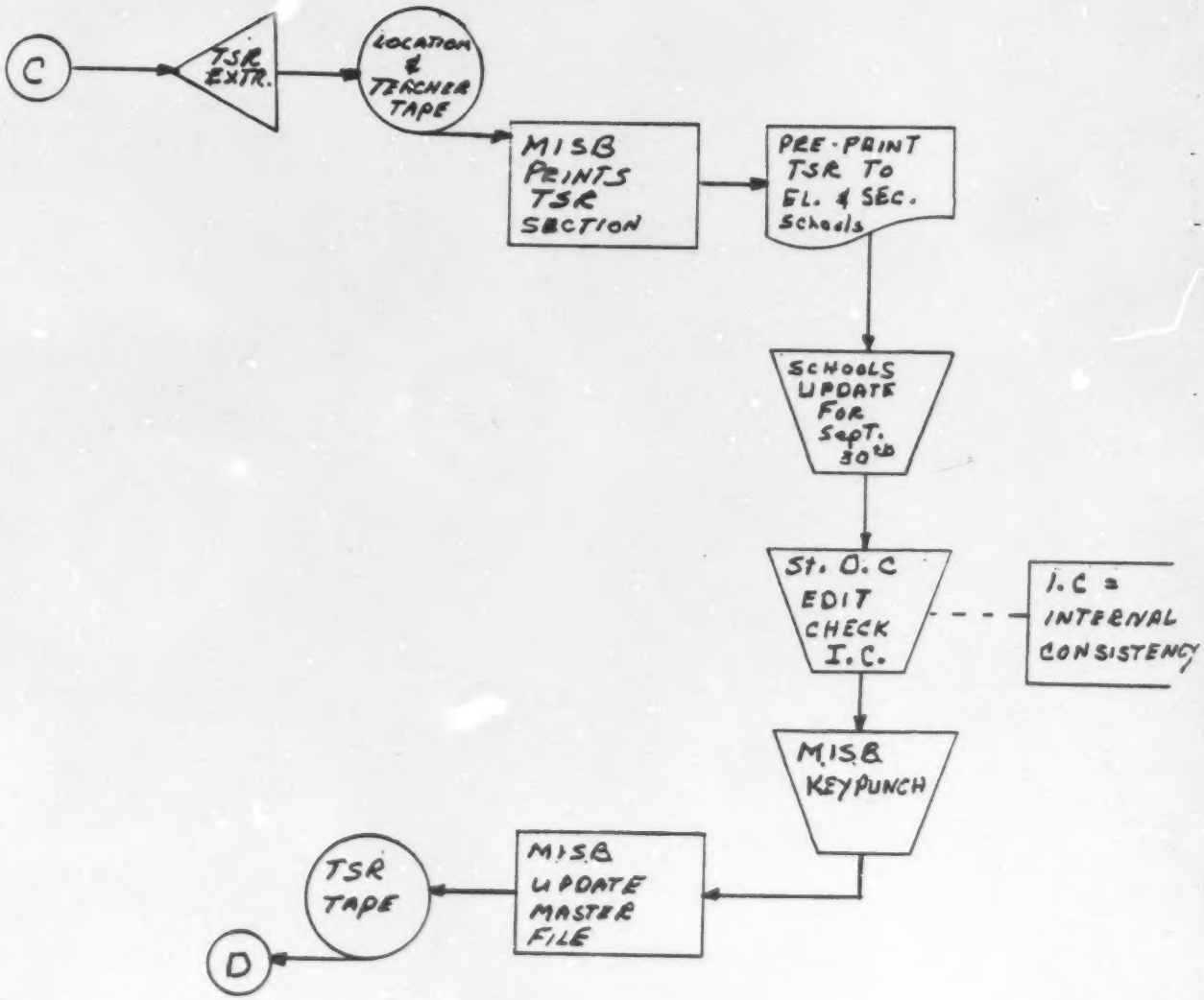

Y
EL Sch
Sec.
Sch.
ALL
S.R.
ALL
Schools
MISB
UPDATE
VALIDITY
MISB
KEYPUNCH
VAL
=
<4
ERROR
REPORT
St. D.C.
CORRECTS
ON
CHANGE
FORM
=9
VALDIDITY
O.K.
REPORT
K
Schools
=
<208
K
=208
ST. D. C.
REQUEST
Release of
DATA
Deputy Dir
GRANTS
DEPT.
APPROVAL
YES
D
TSR
+
SR
Z

Z
MISB
PRINT S.R.
ALL Schools
ALL Dept.
END.

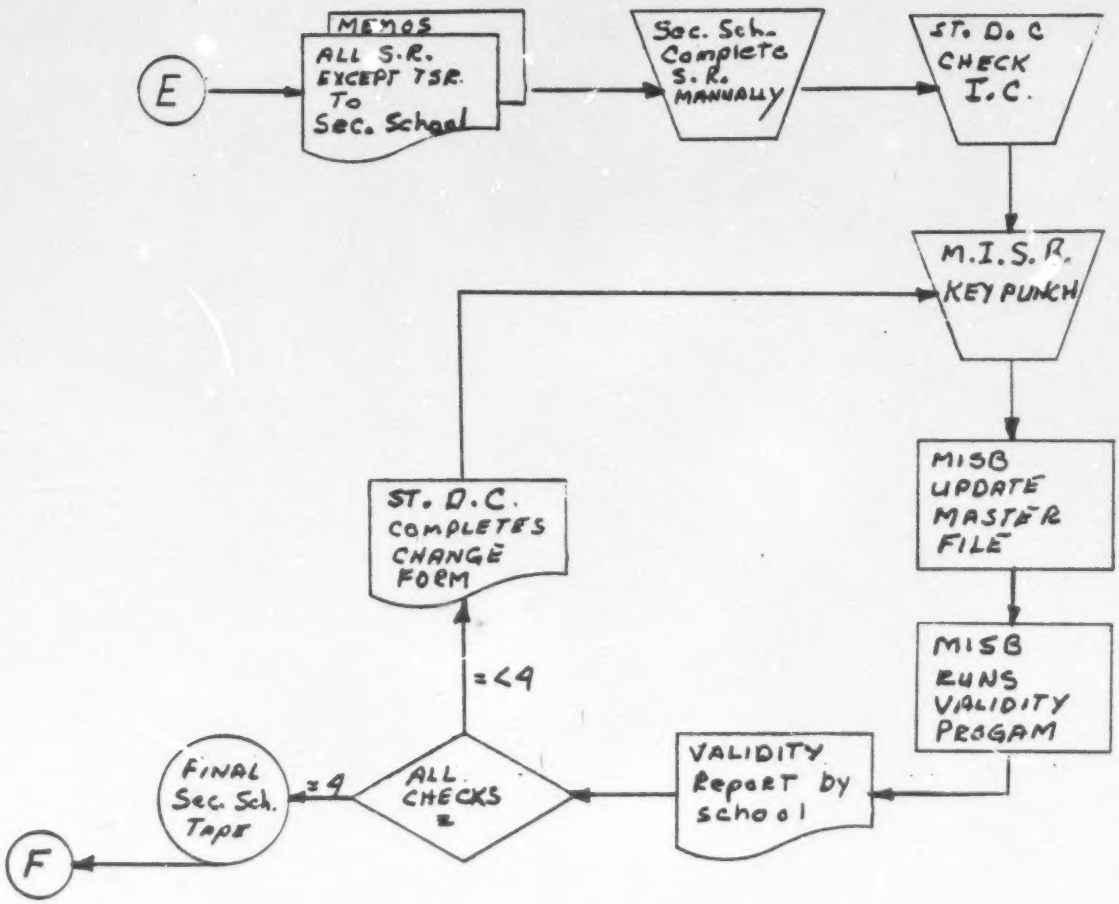
Normal Flow of SDC's to Update School File



FLOWCHART of CREATION of TEACHING STAFF REPORT (TSR) of OMESR.



FLOW for COMPLETION of SECONDARY SCHOOL SEPT. REPORT



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